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AGRICULTURAL OUTLOOK

Statistical Indicators

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In This Issue . . .

Biotechnology issues... Organic farming... Farm outlook for 2000... 10-year baseline projections... Trade pacts & developing countries

U.S. Farm Economy: Near-Term Weakness

Overall conditions in the farm economy in early 2000 are largely a replay of last year. Markets for major commodities, particularly field crops, are very weak as supplies remain relatively large. Despite the severity of the market downturn for many producers, an overall farm economic crisis has not materialized, due in large part to built-in government support and supplemental emergency economic and disaster assistance. Positive developments in U.S. agriculture this year include higher cattle and hog prices and a fairly strong national farm balance sheet.

Longer term developments, including movement back to sustained global economic growth, will strengthen agricultural trade and income prospects for U.S. farmers, according to USDA's 10-year baseline projections. Economic recovery is underway in most countries affected by the global financial crisis of the late 1990's. Economic growth, especially in developing countries, is providing a foundation for gains in global demand, agricultural trade, and U.S. agricultural exports.

Food Price Rise Expected

The consumer price index for all food is expected to increase 2-3 percent in 2000, following a 2.1-percent increase in 1999, the smallest gain since 1992. The 2000 rise will be closer to the high end of the projected range if energy prices remain at elevated levels for 6 months or more or if demand for meat products is greater than expected.

U.S. Organic Agriculture Gaining Ground

U.S.-certified organic cropland more than doubled during the 1990's, and eggs and dairy grew even faster. U.S. producers are turning to organic farming as a way potentially to lower input costs, decrease reliance on nonrenewable resources, capture high-value markets and premium prices, and boost farm income. Markets for organic vegetables, fruits, and herbs

have been developing for decades in the U.S., and organic grain and livestock markets are emerging. Under USDA's new proposal for regulating organic production and handling in the U.S., purchasers of organic foods would be able to rely on uniform and consistent national standards for defining the term "organic."

Free Trade Area of the Americas: Benefits for U.S. Agriculture

Progressive elimination of trade and investment barriers within the Western Hemisphere is the goal of the Free Trade Area of the Americas (FTAA), a regional agreement under negotiation among 34 countries, including the U.S. The FTAA will expand market opportunities for U.S. agricultural products by progressively eliminating tariffs and nontariff barriers, facilitating investment, and helping to lock in the unilateral policy reforms of member countries. U.S. agricultural export growth, and the more efficient resource reallocation that follows reduction of trade barriers, will strengthen U.S. farm income. The commitment of the pact to implement and advance WTO disciplines suggests that the FTAA can complement U.S. efforts to liberalize agriculture in a multilateral setting.

Emerging Trade Issues For Developing Countries

Global trade negotiations will involve increasingly significant participation by developing countries. Agriculture often provides a large share of export earnings for developing countries. Key agricultural trade issues for particular countries are determined by the specific commodities they trade, by their economic and trade policies, and by their level of development. Developing countries are recognizing that participation in multilateral negotiations provides an opportunity to enhance their trading position and advance their development goals.

Biotechnology: Implications For U.S. Corn & Soybean Sectors

Uncertainty in marketing bioengineered crops abroad stems in part from potential limitations from government policies and the direction and intensity of consumer preferences. A key factor in assessing potential impacts is export share of use, about 18 percent for U.S. corn in 1998/99 and 42 percent for soybeans. With the U.S. supplying two-thirds of global corn trade, importers cannot easily satisfy demand with alternative sources. Traditional competitive forces (mainly prices) appear to be the main factors behind changes in bilateral trade patterns for soybeans. The biotech issue has potential to influence world trade flows, and consumer preferences may create two potential markets in the future.

Segregation of biotech and nonbiotech commodities could become a consideration for grain handlers. Keeping the commodities separate could be accomplished by "crop segregation" or "identity preservation." These marketing practices to preserve a commodity's unique characteristics are an extension of practices already used to preserve differentiation of value-enhanced commodities such as high-oil corn. USDA's Economic Research Service has developed a scenario indicating that added costs for segregating nonbiotech corn and soybeans could be higher than the added costs of segregating value-enhanced crops.

Agricultural Economy


Dennis Shields

Outlook for the Farm Economy In 2000

Overall conditions in the farm economy in early 2000 are largely a replay of last year. Markets for major commodities, particularly crops, are very weak. Agricultural exports are moving sideways, forecast at $49.5 billion in fiscal 2000, only $0.5 billion above last year's level. Export volume this year is projected down—by 4 percent—as wheat and corn tonnage declines.

Forecast U.S. farm prices illustrate the severity of the market downturn for many producers, but an overall farm economic crisis has not materialized, due in large part to built-in government support and supplemental emergency economic and disaster assistance. Prices for soybeans in the 1999/2000 marketing year are expected to be the lowest since 1972/73; cotton prices so far have been the lowest since 1974/75; corn and wheat prices are expected to be the lowest since 1986/87; milk, the lowest since 1990/91; and rice, the lowest since 1992/93.

While these statistics may generate pessimism for U.S. producers, the reduced prices provide a measure of benefit to many consumers, and a number of positive developments in U.S. agriculture are noteworthy. Also, cattle and hog prices in 2000 are expected to be higher than a year ago.

Global economies are improving. World economic growth in 2000 is forecast to exceed 3 percent, a rate not seen since 1997. Southeast Asian economies are expected to grow 6 percent this year, in contrast to a 6-percent contraction in 1998. And Latin America is expected to post a 2.7-percent gain, emerging from recession in 1999. U.S. exports to these regions should improve, but overall export recovery will be slow, as little import growth is expected from major, or formerly major, markets such as Japan, China, Russia, and the European Union. The strength of the U.S. economy has raised domestic demand for many commodities. For instance, per capita meat consumption was record-high in 1999 despite rising prices for red meat.

The national farm balance sheet is fairly strong, a considerable plus, because the more solvent the average farmer, the greater the resiliency to face weak markets. Record-high prices in the mid-1990's helped strengthen financial positions coming into this market downturn. Farmers helped themselves by holding back on equipment purchases, paying off debt, and curtailing debt expansion. At the same time, farm real estate values have continued to rise, up 18 percent over the past 5 years. Record-high government payments have shored up farm income the past 2 years—contributing to the second-highest level of U.S. net cash farm income ever in 1999—which has helped support real estate values and reduced the degree of leverage on farm real estate. However, little to no growth in farmland values is expected over the next couple of years.

Agricultural banks generally are in good shape, with a fairly low level of delinquent and nonperforming loans. The share of such loans in the portfolio of agricultural banks in late 1999 was one-fifth the level of the mid-1980's.

Growth in farm production costs has been slow, due to low inflation, relatively low interest rates, and low feed costs. One detrimental cost component is the large increase in oil prices, which could raise farmers' fuel and oil costs by up to several billion dollars in 2000, depending on the actions of oil-producing nations (see forthcoming *AO*).

Improvement in productivity and efficiency continues in U.S. agriculture. These gains bolster the U.S. competitive position in global markets, make better use of productive resources, and benefit those producers employing the efficiency techniques. And while some think that structural changes such as consolidation and dislocation must accompany any efficiency gains, the number of U.S. commercial-size farms has declined only 0.4 percent annually since 1993.

Crop surpluses do not rival past surplus levels. This year's ratio of world carryover stocks to total use for feed grains, for example, is about the same as it was during the first 5 years of the 1990's, and 20 percent below the average of the 1980's. This means that while global demand is recovering somewhat slowly, a weather disaster could easily cause a substantial runup in feed grain prices. Global wheat stocks are also well below highs of the mid-1980's.

Projections and discussions in this article are drawn from a presentation at USDA's 2000 Agricultural Outlook Forum held in Arlington, VA, on February 24-25, 2000. See the following article for a summary of long-term prospects for U.S. agriculture.

Cash Receipts for Major Crops To Fall

Despite the positive elements, the farm economy picture for 2000 remains clouded by the prospect of very weak farm income. USDA forecasts that farm cash receipts will fall to $190 billion in 2000, $2 billion below last year and $18 billion below the record set in 1997. Lower receipts and lower government payments than last year are forecast to reduce net cash income for 2000 to $49.7 billion, down nearly 20 percent from 1999 and the lowest since 1986.

Government payments have been offsetting much of the decline in cash receipts for major crops. Total government payments increased from $7.5 billion in 1997 to a record $23 billion last year. In calendar 2000, government payments, without any new legislation, will likely exceed $17 billion, the second-highest ever.

Reviewing a few major commodities illustrates why 2000 prospects look so weak. In 1999, U.S. producers planted the lowest wheat acreage since 1972, and even lower acreage and production are likely in 2000. On top of that, low precipitation and soil moisture in the Plains states are likely to reduce the yield on winter wheat below trend. With lower acreage, U.S. production could fall 200 million bushels below last year. The weather pattern since last fall has looked similar to 1996, which saw below-trend wheat yields. A reduced U.S. wheat crop may lead to slightly stronger prices, but wheat prices will remain under pressure, as weather has generally been favorable elsewhere in the world. The largest U.S. carryover stocks since 1988 will also limit price gains.

The corn market has been strengthening, driven by record-high total use for the 1999 crop, but the price is still expected to average only $1.90 a bushel, slightly below 1998. While corn acreage is likely to be down slightly in 2000, higher yields will keep next season's total supplies near this year's level. With total use also near this year's level, keeping ending stocks about the same, corn prices are expected to show only modest improvement next season.

U.S. Farm Economy at a Glance

	1996	1997	1998	1999	2000
			$ billion		
Cash receipts	199.1	207.6	196.8	191.9	189.9
Government payments	7.3	7.5	12.2	22.7	17.2
Cash expenses	159.9	169.0	167.8	170.0	171.5
Net cash income	57.5	58.5	55.0	59.1	49.7
Farm debt	156.1	165.4	172.9	172.8	172.5
Farm assets	1,003.9	1,051.6	1,064.3	1,067.2	1,072.8
			Percent		
Debt-to-asset ratio	15.6	15.7	16.2	16.2	16.1
			$ billion		
Agricultural exports	59.8	57.3	53.6	49.0	49.5
Agricultural imports	32.6	35.8	37.0	37.5	38.0
			1990 = 100		
Value of dollar*	101.0	109.6	115.5	112.0	108.7
			Percent change		
Consumer price index for food	3.3	2.6	2.2	2.1	2-3

1999 estimate. 2000 forecast.
*Agricultural trade-weighted, inflation-adjusted.

Economic Research Service, USDA

In January, the farm price of soybeans continued to recover from the low $4-per-bushel range of last summer, the lowest in three decades. For the 1999 crop, prices are forecast to average $4.70 per bushel, a little below the previous year. Expanding soybean acreage was the story of the 1990's, and area is likely to expand again in 2000, as relative returns (including government marketing loan benefits) look preferable to some other crops (*AO* May 1999 and December 1999). With trend yields, we could see record production, another year of rising carryover, and prices even lower than for the 1999 crop.

Cotton and rice prices have been very low this year as carryover stocks of both are rising. In 2000, cotton production is expected to be up, but price prospects could possibly improve, especially if China continues to reduce production and stocks. China lowered its procurement prices on cotton as much as 40 percent for the 1999 crop, which should restore some balance to cotton markets in China and in the U.S. For rice, carryover stocks on August 1 are expected to be nearly double last year's. The 33-percent drop in this year's farm price should reduce acreage and production in 2000, but the large carryin will likely continue to pressure prices.

Other crops face mixed prospects in 2000. Cash receipts for fruit, vegetables, and greenhouse and nursery crops are expected to rise $1.2 billion to $42 billion. While fresh vegetable prices are likely to increase from last year's reduced levels, fresh citrus prices are settling back to normal levels after the December 1998 freeze. Exports of horticultural products are likely to rise slightly in 2000 after 2 flat years, as Asian economies strengthen and U.S. citrus supplies recover.

Tobacco producers continue to struggle; receipts will decline again in 2000 to $1.8 billion, down $0.4 billion from last year. Higher retail cigarette prices and reduced use are causing sharp farm quota reductions. Peanut production may decline slightly, with a return to trend yields, lowering cash receipts somewhat. Sugar production is likely to flatten, due in part to lower prices, but there is increasing uncertainty over 2000/01 imports, supplies, program costs, and international trade obligations.

Agricultural Economy

WINDOW on the PAST

Excerpts from USDA publications

US Agricultural Export Outlook Mixed

U.S. agriculture continues subject to the whims of weather and economic conditions around the world. Currently, the world agricultural economy is characterized by generally large food supplies and increasing consumption. Recent export levels demonstrate the strengthening of foreign demand for many U.S. farm products. Export value is up dramatically for several major commodities, including cotton, soybeans and soybean products, animal fats, cattle hides, and vegetables. On the other hand, growing world grain supplies have depressed prices and are restraining U.S. exports. Wheat exports are down sharply this marketing year.

Agricultural Outlook, May 1977

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Livestock Prices Projected Up

The picture for livestock and poultry is more encouraging than for crops. Cattle prices are projected to average about 5 percent higher in 2000 following last year's nearly 7-percent increase, as liquidation of the U.S. cattle herd finally leads to reduced beef production, which is forecast down by 1 percent. Lower hog numbers are expected to reduce pork production about 3 percent this year, which could push hog prices to around $40 per cwt for the year and enable many producers finally to operate in the black. Broiler prices this year are projected to be off about 3 percent from last year, but producer net returns are expected to continue positive due to lower feed costs.

Milk is a key part of farm income accounts, with producer sales of $22-$23 billion in recent years. Milk prices were record high in 1998 and near-record high in 1999, which caused last year's milk production to register the highest year-to-year gain of the decade. This surge will pressure farm milk prices for several months, with the 2000 all-milk price forecast to average 12 percent below 1999.

U.S. consumers will enjoy an abundant, affordable food supply again in 2000. The consumer price index for food during the 12 months ending in January rose only 1.5 percent, the smallest 12-month increase since 1992. In 2000, an increase in the range of 2 to 3 percent is expected. Upward pressure will come from beef and pork, reflecting tightening supplies. On the other hand, dairy products and citrus should be better buys this year, and fresh vegetables are likely to be plentiful again, based on winter acreages.

Because the farm economy faces weak markets, the role of government will be prominent again this year. First, substantial government payments will be made under current programs. For example, payments under the marketing assistance loan programs, which were nil in 1996 and 1997, are forecast at $8 billion for the 2000 crops. Second, USDA has announced five new initiatives using the Secretary's discretionary authority. These are in various stages of implementation and include a bioenergy program, farm storage facility loan program, enhanced Conservation Reserve Program incentives, a freeze for the 2000-crop loan rates, and another large humanitarian assistance package. Third, the administration has offered a legislative proposal for providing additional income support, conservation benefits, and risk management assistance.

In addition to government action, many uncertainties will affect the marketplace, including global weather disruptions; biotech acceptability; continuing structural changes such as expanding supply chains, contracting, and market segmentation; and economic growth and policies in areas like Japan and China. **AO**

Keith Collins
Chief Economist, USDA

Upcoming Reports—USDA's Economic Research Service

The following reports are issued electronically at 3 p.m. (ET) unless otherwise indicated.

April

11 *World Agricultural Supply & Demand*
12 *Cotton & Wool Outlook (4 pm)***
*Oil Crops Outlook (4 pm)***
*Rice Outlook (4 pm)***
13 *Wheat Outlook (9 am)***
19 *Agricultural Outlook**
*Tobacco**
21 *Vegetables & Specialties**
24 *Feed Yearbook**
25 *U.S. Agricultural Trade Update (3 pm)*
27 *Livestock, Dairy & Poultry (4 pm)***

*Release of summary, 3 p.m.
**Available electronically only

Global Trade & International Issues Shape Long-term Outlook for U.S. Agriculture

Developments in the international arena result in relatively weak U.S. agricultural prices in the initial years of USDA's 10-year baseline projections. But the longer term picture includes sustained global economic growth and stronger agricultural trade and income prospects for U.S. farmers.

Sizable harvests in the U.S. and abroad over the past several years, partly in response to high prices in the mid-1990's, have pushed up global supplies for many agricultural commodities. Additionally, world agricultural demand in the late 1990's was weakened by the global financial crisis.

Consequently, the U.S. agricultural sector has faced strong foreign competition in a weakened global trade setting. U.S. agricultural export value has fallen from a record of almost $60 billion in fiscal 1996 to about $49 billion estimated for fiscal years 1999 and 2000. While export volume in 1999 and in 2000 is up from 1998, low commodity prices have held down total value.

U.S. net farm income is off as well—from nearly $55 billion in 1996 to $40.4 billion expected in 2000—although declines have been buffered by increases in government payments—marketing loan benefits increased as prices of major field crops dropped, and emergency legislation generated additional farm payments. Farm income is expected to decline through 2001, largely reflecting a reduction in direct government payments from recent high levels. The baseline assumes no additional payments from emergency legislation, although marketing loan benefits continue to play an important role in the U.S. farm sector in the near term as large global supplies keep farm prices under pressure. With reduced farm income over the next few years, debt management will be crucial to the financial condition of the sector. Despite near-term cash flow difficulties, a strong financial position achieved during the 1990's will help farmers during this period.

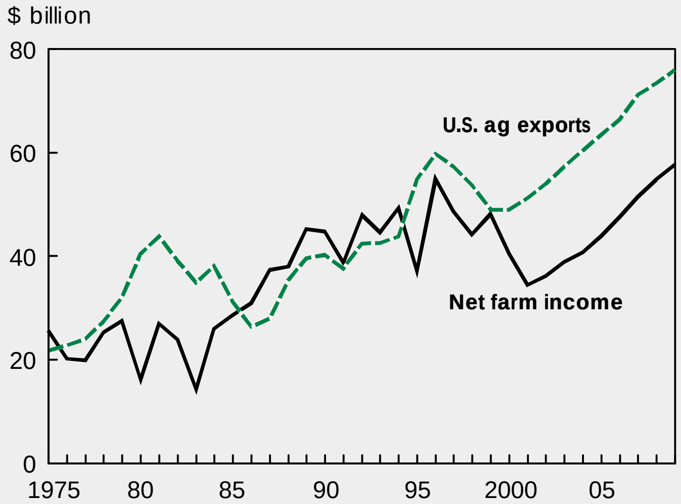
Economic recovery is now underway in most crisis-affected countries, and global demand and trade are strengthening. Export volumes and commodity prices are projected to turn upward in 2001, leading to gains in U.S. agricultural export values.

Longer run developments in the agricultural sector reflect continuing macroeconomic improvement, with the global economy moving back to a period of sustained growth, due in part to structural reform in countries most affected by the global financial crisis of the late 1990's. Economic improvements, particularly in developing countries, provide a foundation for further gains in global demand, agricultural trade, and U.S. agricultural exports. Incomes in many developing countries are at levels where consumers diversify their diets and include more meats and other higher valued food products, and where consumption and imports of food and feed are particularly responsive to income changes.

Overall, improving agricultural demand prospects are driven by the outlook for healthy economic growth in most of Asia, Latin America, North Africa, and the Middle East; moderate gains in developed countries; and continued progress toward freer trade through ongoing unilateral policy reforms and existing multilateral agreements. Solid prospects for trade expansion in these regions are expected to more than offset relatively weak growth in parts of Asia, Africa, and the former Soviet Union (FSU).

Expanding production potential in a number of foreign countries, however, will result in continued strong export competition throughout the baseline period. For example, by the middle of the projection period, U.S. wheat exports face greater competition when the European Union (EU) is able to export wheat without subsidies. Argentina and China are expected to remain strong competitors in coarse grains trade. And U.S. exports of soybeans and products face continuing competition from Argentina and Brazil.

U.S. Net Farm Income and Agricultural Exports To Rebound



Calendar year for income; fiscal year ending September for exports. 2000-09 projected.

Economic Research Service, USDA

Despite continued competition, improved trade growth leads to rising market prices and export earnings during the last half of the baseline. The total value of U.S. agricultural exports is projected to increase to almost $76 billion by 2009, with both bulk and high-value product exports projected higher. As agricultural trade and U.S. exports expand, large global supplies are reduced and agricultural prices rise, leading to gains in farm income. Further, with commodity prices rising, direct government payments fall and then level off, and the agriculture sector increasingly relies on the marketplace for its income.

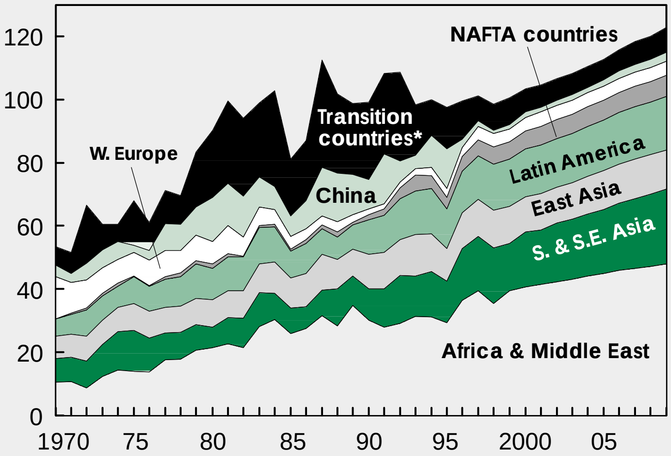
Increasing farm incomes and relatively low interest rates assist in asset accumulation and debt management, resulting in relative stability in aggregate financial conditions in the farm sector. Debt-to-asset ratios, for example, continue the downward trend of the last 15 years from the high levels of over 20 percent in the mid-1980's.

Consumer food prices are projected to continue a long-term trend of rising less than the general inflation rate. Consumers are

USDA's complete 2000 baseline projections are available at: **www.ers.usda.gov/briefing/baseline/**. The projections were prepared in October-December 1999 and are published in *USDA Agricultural Baseline Projections to 2009*, released February 2000. Projections assume no shocks and are based on specific assumptions regarding macroeconomic conditions, policy, weather, and global developments.

Agricultural Economy

Projected Global Wheat Imports Bolstered by Gains In Africa and Middle East, and in South and S.E. Asia



2000-09 projected.
*Former Soviet Union and Eastern Europe.
Economic Research Service, USDA

projected to spend an increasing share of their food dollar on meals eaten away from home.

International Issues & Uncertainties

Shaping these projections are a number of international developments, while several uncertainties could lead to alternative outcomes.

Macroeconomic conditions in developing countries. The projected strengthening of bulk commodity markets in the baseline is linked closely to macroeconomic conditions in developing countries, particularly the expectation of robust economic growth and a return to historical trends in exchange-rate movements. Baseline assumptions are consistent with many independent forecasts, but recent shocks to income growth and exchange rates associated with the Asia crisis underscore the uncertainties in projecting both economic activity and agricultural trade in developing regions.

The baseline trade outlook for bulk commodities and meats is highly dependent upon assumed income growth and local exchange rates in the developing Asia region. This stems from the region's large share of world trade volume in these commodities, relative openness to trade, and responsiveness of food demand to changes in income and prices. Global impacts of slower growth or reduced local currency valuations in the Latin American or the transition economies (the FSU and Eastern Europe) would also be significant, but smaller than for developing Asia, largely because these regions generally account for smaller shares of global demand and trade. Alternative macroeconomic assumptions for the Africa and Middle East region tend to result in smaller global impacts than for other regions. Although this region accounts for large shares of world wheat and coarse grain trade, the region's markets and consumers tend to be relatively less responsive to income and price changes.

Change in sources of global import demand. During the 1980's and early 1990's, global trade in wheat and coarse grains was unstable with no overall growth, largely because of erratic market behavior of the transition economies of the FSU, as well as China. For both wheat and coarse grains, however, underlying growth in other regions, particularly the developing regions, has been relatively strong and stable. For the 2000-09 period, markets for these commodities appear poised for growth even without significant contributions from China and the FSU.

In contrast to grains, the market for soybeans and meal has shown steadier expansion, particularly since the late 1980's, buoyed by gradual growth in the dominant EU market. For 2000-09, however, declining EU import demand is projected to slow overall trade growth, despite continued expansion in China and other regions.

World meat trade has shown strong growth since the mid-1970's, with fluctuating demand by the transition economies of the FSU accounting for the bulk of instability in trade volume. Expansion in Asian markets is projected to help sustain future growth, but developments in the volatile FSU market will be important to the overall outcome.

China's agricultural supply and demand. Prospects for China's future trade remain a major uncertainty in the outlook. Under baseline assumptions, which exclude China's potential accession to the WTO, China's grain imports are projected to show little growth through 2009. Recently announced changes in China's grain procurement policy imply somewhat lower future grain area, but trade impacts of these policy changes are expected to be more than offset by other factors. These factors include very high grain stocks that are likely to be reduced over the next decade, somewhat slower growth in incomes and food demand, and increased government investment in agricultural research, development, and infrastructure that is likely to have a positive impact on crop yields. China's accession to the WTO would likely significantly boost global and U.S. agricultural trade (*AO* March 2000).

Agenda 2000 reforms in the EU. In March 1999, the EU enacted agricultural policy reforms under Agenda 2000, including reduced intervention prices, increased direct income support, and a lower cropland set-aside. These policy changes further shift the EU from price supports to direct payments in order to increase the global competitiveness of EU agriculture. However, the baseline analysis indicates that the EU will continue to need subsidies to export most agricultural products, making those exports subject to Uruguay Round (UR) limits.

The extent to which Agenda 2000 reforms will make EU wheat more competitive in world markets is a key uncertainty in the outlook. In the baseline, the lower intervention price makes EU wheat competitive in world markets without subsidy by 2004/05, allowing exports to rise above subsidized export limits set in the Uruguay Round. How much EU wheat exports rise will then depend in part on the responsiveness of EU farmers in switching from high-yielding feed wheat to lower yielding food-quality wheat for export markets. Despite lower intervention prices, EU coarse grains are not expected to become price-competitive in world markets, and exports remain constrained by UR limits on subsidized exports.

Changes in EU oilseed payments under Agenda 2000 are not expected to have significant impacts on oilseed production. However, lower intervention and market prices for grain feeds are projected to dampen long-term demand and imports of protein feeds, including soybeans. **AO**

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Briefs

Food & Marketing

Food Price Outlook for 2000: An Update

The consumer price index (CPI) for all food is expected to increase 2-3 percent in 2000, following a 2.1-percent increase in 1999. Food at home is projected to rise 2-2.5 percent, while food away from home should increase 2.5-3 percent. Last year's all-food rise was the smallest since the 1.2-percent gain in 1992.

The all-food CPI increase will be closer to the high end of the range if energy prices remain at elevated levels for 6 months or more. Another factor pushing the CPI to the high end would be greater-than-expected demand for meat products, which appears to be strengthening despite higher prices. A booming domestic economy is fueling this demand and bolstering prices.

Beef and veal. After increasing 2 percent in 1999, the CPI for beef is expected to increase 4-6 percent in 2000, the largest gain since 1993. Domestic beef supplies are likely to tighten in fourth-quarter 2000 and remain tight over the next couple of years. With supplies smaller and prices higher, consumption is expected to lower by 0.6 pounds in 2000, to 68.7 pounds per capita.

Beef production was up nearly 3 percent in 1999 to 26.5 billion pounds, breaking the 1976 record. Production is expected to remain high in first-half 2000 as cattle-on-feed inventory remains record high, then to decline sharply in the second half of the year. Exports are expected to decline 1 percent in 2000 because of slightly lower production, higher prices, and an expected halt in beef donations to Russia. Beef imports for 1999 surpassed earlier expectations, up almost 9 percent, and are expected to reach a record 3 billion pounds in 2000, up 5 percent from 1999.

Pork. Reduced pork output is expected to boost retail pork prices 4-6 percent in 2000, after declining 1.8 percent in 1999 and 4.7 percent in 1998. Following 2 consecutive record years, production is expected to fall 3 percent to 18.7 billion pounds in 2000. Responding to low returns in 1998, hog producers began to reduce breeding herds late in the year, continuing through 1999. Pork consumption in 2000 will likely decline 2.5 pounds from 1999 levels to 51.7 pounds per person in 2000. Supporting the gains in pork prices will be sharply declining beef production in second-half 2000 and moderating broiler production in 2000.

Poultry. The CPI for poultry is expected to increase 0-2 percent in 2000, following a 0.5-percent gain in 1999. Projected declines in beef and pork production and a slower rate of growth in broiler production should prevent broiler prices from dropping. Broiler meat production is expected to increase to 30.8 billion pounds in 2000 from 29.5 billion pounds in 1999. Turkey production, which was 5.2 billion pounds in 1999, is forecast to increase slightly, reaching 5.3 billion pounds in 2000.

Broiler exports are expected to expand in 2000, with greater shipments going to a number of Asian markets and to a slowly recovering Russian market. U.S. broiler exports in 2000 are expected up 2 percent to 4.8 billion pounds in 2000, about the same growth rate as in 1998. Demand in developing countries is expected to expand due to rising populations and a growing preference for a western-type diet.

Eggs. Retail egg prices are forecast unchanged in 2000 following a 5.4-percent drop in 1999. Egg production increased nearly 4 percent in 1999, lowering wholesale and retail egg prices. With feed costs in check, returns to egg production were positive in 1999, and table-egg production is expected to increase about 2 percent in 2000. Higher production levels and slower growth in exports led to lower retail prices in the last 3 years. Per capita consumption is expected to reach 258.6 eggs in 2000, up 1 percent from 1999.

Dairy products. For most of 1999, milk production could not keep pace with demand, and the CPI for dairy products increased 5.8 percent. Retail prices are expected to decline 1-2 percent in 2000 as milk production expands due to higher producer prices last year, lower feed prices, and ample alfalfa supplies.

Changes in Food Price Indicators, 1998 through 2000

	Relative weights*	1998	1999	Forecast 2000
	Percent	*——Percent change——*		
All items		1.6	2.2	2.6
All food	100.0	2.2	2.1	2 to 3
Food away from home	37.2	2.6	2.5	2.5 to 3
Food at home	62.8	1.9	1.9	2 to 2.5
Meats	10.8	-1.9	0.5	4 to 6
Beef and veal	4.8	-0.2	2.0	4 to 6
Pork	3.8	-4.7	-1.8	4 to 6
Other meats	2.2	-0.9	1.0	3 to 5
Poultry	3.2	0.3	0.5	0 to 2
Fish and seafood	2.2	2.6	2.0	2 to 3
Eggs	0.8	-3.3	-5.4	-1 to 1
Dairy products	6.7	3.6	5.8	-2 to -1
Fats and oils	1.9	3.7	1.0	1.5 to 2.5
Fruits and vegetables	9.0	5.7	2.5	2 to 3
Fresh fruits and vegetables	6.9	7.3	2.8	2 to 3
Fresh fruits	3.5	4.3	8.0	2 to 3
Fresh vegetables	3.4	10.9	-3.0	2 to 3
Processed fruits and vegetables	2.1	1.7	2.1	2 to 3
Sugar and sweets	2.4	1.6	1.4	1.5 to 2.5
Cereal and bakery products	10.0	2.0	2.2	2 to 3
Nonalcoholic beverages	7.0	-0.3	1.0	2 to 3
Other foods	8.5	2.7	2.1	2 to 3

*Bureau of Labor Statistics estimated weights as share of all food, December 1998.
Sources: Historical data, Bureau of Labor Statistics; forecasts, Economic Research Service.
Economic Research Service, USDA

Briefs

A robust economy is projected to keep dairy demand brisk in 2000. Strong consumer demand for dairy items, especially cheese, butterfat products, and gourmet ice cream, is expected to continue this year. Consumer readiness to buy these items is due partly to rising disposable personal income. Increased spending for away-from-home meals, and the willingness to pay for convenience and other forms of commercial food preparation, are also important factors.

Fats and oils. Prices increased 1 percent in 1999 and are expected up 1.5-2.5 percent in 2000. The small increase was due largely to lower retail prices for butter, which accounts for 31 percent of the fats and oils index (butter was transferred in December 1997 from the dairy products category). Remaining items in the fats and oils index are highly processed food items (e.g., peanut butter, salad dressing), and price changes are influenced by the general inflation rate as well as U.S. and world supplies of vegetable oils.

Fresh fruits. The fresh fruit index rose 8 percent in 1999, due mainly to higher retail prices for fresh oranges (navel oranges up 49 percent and Valencia oranges up 44 percent), which account for 20 percent of the fresh fruits index. Retail prices for many other fruits also averaged above the previous year, including grapefruit (up 8 percent), grapes (up 16 percent), lemons (up 11 percent), peaches (up 5 percent), pears (up 2 percent), and strawberries (up 3 percent). Retail apple prices were lower in first-half 1999, reflecting sales of the record 1998 crop. Apple production fell 7 percent in 1999, and prices since last fall have remained above year-earlier levels. The fresh fruit CPI is forecast to increase 2 to 3 percent in 2000, with continued strong U.S. consumer demand offsetting a return to normal production levels (following a reduced 1998/99 citrus crop).

Fresh vegetables. Fresh-market vegetable acreage for harvest increased 1 percent in 1999, with summer vegetable area up 5 percent over a year earlier. Growing conditions in major fresh vegetable areas were normal in 1999, and the CPI for fresh vegetables fell 3 percent. With reduced grower and retail prices, growers may have the incentive to cut acreage in 2000. However, winter-season vegetable acreage in primary desert production areas in southwestern U.S. is up for several major vegetables, including tomatoes and lettuce. Assuming normal weather and growing conditions in the major fresh vegetable growing areas in 2000, the fresh vegetable index is forecast to increase 2-3 percent.

Processed fruits and vegetables. Adequate supplies of most fruits and vegetables for processing limited the rise in the CPI for processed fruits and vegetables to 2.1 percent in 1999. The index is expected up 2-3 percent in 2000.

Sugar and sweets. The sugar and sweets index rose only 1.4 percent in 1999, reflecting relatively low inflation and increased production. The CPI is projected to increase 1.5-2.5 percent in 2000, despite a forecast record 9 million short tons of sugar production in 1999/2000, as demand remains strong. U.S. sugar consumption has expanded at a rate of about 1.9 percent per year since 1985/86.

Cereal and bakery products. These items account for a large portion of the at-home food CPI— almost 16 percent. The CPI for cereals and bakery products increased 2.2 percent in 1999, reflecting modest gains in processing costs and lower grain prices in 1999. In most cases, processing and marketing account for more than 90 percent of cereal and bread production costs, with farm ingredients a minor component of total cost. With consumer demand for bakery products expected to remain fairly strong, the CPI is forecast up 2-3 percent in 2000.

Nonalcoholic beverages. The CPI for nonalcoholic beverages, up 1 percent in 1999, is forecast to increase 2-3 percent in 2000. Carbonated beverages and coffee are the two major components, accounting for 38 percent and 28 percent of the nonalcoholic beverages index. Retail prices for soft drinks recovered slightly in 1999 following declines in 1997 and 1998. Partially offsetting these gains were lower coffee prices, reflecting a near-record crop in Brazil, the largest producer of arabica coffee beans. Excellent weather for the current crop should lead to an ample supply and larger U.S. stocks with continued lower consumer prices. The U.S. imports up to 80 percent arabica beans along with 15-20 percent robustas, which go mainly to soluble (instant) coffee or are blended with arabicas.

Other foods. Miscellaneous prepared foods are highly processed and are largely affected by changes in the all-items CPI. These products include frozen dinners, pizzas, and precooked frozen meats. Competition among these products and from the away-from-home market should continue to dampen retail price increases for items in this category. In 1999, the CPI for this category increased 2.1 percent and is expected to rise 2-3 percent in 2000. AO

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WINDOW on the PAST

Excerpts from USDA publications

U.S. Wholesale Food Prices Drop

[This year's] situation was highlighted by the sharpest drop in wholesale food prices in 17 years, the smallest year-to-year advance in retail food-at-home prices in almost a decade, and a big 3-percent increase in per capita food consumption. This contrasts to the consumption and price movements of the previous 3 years and reflects generally large crop harvests and heavy output of livestock and poultry products.

The CPI for all food during the entire year averaged about 3 percent above [the previous year], in contrast to an increase of over 6½ percent for nonfood items. Retail prices for food at home were up about 2 percent while food-away-from home prices rose almost 7 percent.

Agricultural Outlook, January/February 1977

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California Certified Organic Farmers

U.S. Organic Agriculture Gaining Ground

Organic farming became one of the fastest growing segments of U.S. agriculture during the 1990's, and producers, exporters, and retailers are still struggling to meet consumer demand for a wide range of organic products. Certified organic cropland more than doubled in the U.S. during the 1990's, and two organic livestock sectors—eggs and dairy—grew even faster, according to a forthcoming study from USDA's Economic Research Service (ERS). The study updates USDA estimates of land farmed with organic practices during 1992-94 with 1997 estimates, and provides state- and crop-level detail unavailable in the past.

Organic produce, milk, eggs, pasta, frozen dinners, and pharmaceuticals are among the many items that consumers count on finding in natural foods supermarkets and are beginning to expect in mainstream supermarkets as well. The International Trade Centre UNCTAD/WTO (ITC) estimates that combined retail sales of organic food and beverages in major world markets for these goods—primarily the U.S., Japan, Denmark, France, Germany, Italy, the Netherlands, Switzerland, and the U.K.—amounted to $11 billion in 1997 and $13-$13.5 billion in 1998. Organic food sales in 1997 accounted for 1 to 2 percent of total food sales in most of these countries, including the U.S., and medium-term growth rate forecasts range from 5-10 percent annually for Germany to 20-30 percent for the U.S. and 30-40 percent for Denmark, according to the ITC.

U.S. producers are turning to organic farming systems as a potential way to lower input costs, decrease reliance on nonrenewable resources, capture high-value markets and premium prices, and boost farm income. Farmers in 49 states dedicated 1,346,558 acres of farmland to organic production systems and used third-party organic certification services in 1997. Two-thirds of the farmland was used for growing crops, with Idaho, California, North Dakota, Montana, Minnesota, Wisconsin, Iowa, and Florida as the top producers. Nearly half the states were raising certified organic livestock. Colorado and Alaska had the largest amount of organic pasture and rangeland.

In the fruit, vegetable, and specialty grain sectors, organic farming has made deeper inroads than in other farm sectors. While only one-tenth of a percent of U.S. corn and soybean crop acreage was grown under certified organic farming systems in 1997, over 1 percent of oats, dry peas, and tomatoes was grown organically and about 2 percent of apple, grape, lettuce, and carrot acreage was organic. Nearly one-third of the U.S. buckwheat, herb, and mixed vegetable crops was grown under organic farming systems in 1997.

More recent reports from some U.S. certifiers indicate that the momentum seen in organic certification during the ERS study period has continued. California Certified Organic Farmers, one of the top certifiers in that state, estimates 1999 acreage at 96,878, up 38 percent from 1997. Idaho estimates its 1999 certified organic cropland (excluding wild-harvested herbs) at 85,061 acres, up 55 percent from 1997. Farm Verified Organic, a private certifier headquartered in North Dakota and operating in multiple states, estimates it certified 99,987 acres in 1999, also up 55 percent from 1997. Preliminary estimates from the Washington Department of Agriculture show 1999 certified acreage at 30,000, up 150 percent from 1997.

Organic farming systems rely on ecologically based practices such as cultural and biological pest management, and virtually exclude the use of synthetic chemicals in crop production and prohibit the use of antibiotics and hormones in livestock production. Under organic farming systems, the fundamental components and natural processes of ecosystems, such as soil organism activities, nutrient cycling, and species distribution and competition, are used to work directly and indirectly as farm management tools. For example, habitat needs for food and shelter are provided for predators and parasites of crop pests, planting and harvesting dates are carefully planned and crops are rotated, and animal and green manures are cycled in organic crop production systems.

Organic livestock production systems attempt to accommodate an animal's natural nutritional and behavioral requirements. Livestock standards address the origin of each animal and incorporate requirements for living conditions, access to the outdoors, feed ration, and health care practices suitable to the needs of particular species. For example, dairy cows must be organically managed for a

One acre equals 0.4047 hectares.

Commodity Spotlight

U.S. Organic Agriculture Has Expanded

U.S. certified organic	1992	1993	1994	1995	1996	1997	Change 1992-97	Change 1995-97
	1,000 acres						*Percent*	
Farmland								
Total	935	956	992	918	--	1,347	44	47
Pasture & rangeland	532	491	435	279	--	496	-7	78
Cropland	403	465	557	639	--	850	111	33
	Number							
Animals								
Beef cows	6,796	9,222	3,300	--	--	4,429	-35	--
Milk cows	2,265	2,846	6,100	--	--	12,897	469	--
Hogs and pigs	1,365	1,499	2,100	--	--	482	-65	--
Sheep and lambs	1,221	1,186	1,600	--	--	705	-42	--
Layer hens	43,981	20,625	47,700	--	--	537,826	1,123	--
Broilers	17,382	26,331	110,500	--	--	38,285	120	--
Unclassified/other	--	--	--	--	--	226,105	--	--
	Number							
Growers (plants & animals)	3,587	3,536	4,060	4,856	--	5,021	40	3

Numbers may not add due to rounding.
Sources: 1992-94, Agricultural Marketing Service, USDA; 1995 (including revisions of 1992-94 farmland), Agrisystems International; 1997, Economic Research Service, USDA.

Economic Research Service, USDA

year prior to producing organic milk, must receive only 100-percent organic feed and allowed supplements, must have access to pasture, and cannot be treated with antibiotics.

U.S. governmental efforts to facilitate organic production have focused primarily on developing national certification standards to assure consumers that these commodities meet a consistent standard and to streamline interstate commerce in organically grown agricultural products. It was private organizations, mostly nonprofits, that began developing certification standards in the early 1970's as a way to support organic farming and thwart consumer fraud. Some states began offering organic certification services in the late 1980's for similar reasons. On the Federal level, Congress passed the Organic Foods Production Act of 1990 to establish national standards for organically produced commodities. This legislation requires that all except the smallest organic growers must be certified by a state or private agency accredited under national standards currently being developed by USDA.

Forty organic certification organizations, including a dozen state programs, conducted third-party certification of organic production in 1997, many following the standards outlined in the Organic Foods Production Act of 1990. All of the state and private groups certified organic production of crops, and 16 of these groups certified production of livestock as well. State and private groups that currently certify growers are expected to seek accreditation by USDA when the national organic standards are implemented.

Specialty Crops Show Big Gains

Markets for organic vegetables, fruits, and herbs have been developing for decades in the U.S., and these crops are grown organically in more states than any other type of commodity. State and private groups certified over 180,000 acres of these crops in 44 states in 1997, more than double the amount certified in 1994, with the biggest gains in cultivated and wild-harvested herbs.

About 2 percent of top fruit and vegetable crop acreage—apples, carrots, lettuce, and grapes—was managed organically. Large farms with hundreds or thousands of acres produced organic processed tomatoes, wine grapes, and other high-value crops on a commercial scale, while numerous farms with small acreages still specialized in mixed-vegetable production for direct marketing to consumers and restaurants.

Organic vegetable crops were produced on 48,227 acres in the U.S. in 1997. Tomatoes, lettuce, and carrots were grown on about a quarter of total organic vegetable acreage, mixed vegetables were grown on a third, and the remainder was "other" or "unclassified." Mixed vegetable production is characterized by small acreages and parcels with a large number of horticultural crops. In 1997, U.S. farmers and market gardeners gained certification for nearly 3,000 acres of organic mixed vegetables on farms or parcels that were 5 acres or less, and for over 14,000 acres on farms and parcels over 5 acres. New York organic producers had over 1,400 acres in the 5-acres-or-less category.

According to USDA producer surveys, certified organic vegetable growers have smaller acreages than conventional growers, and a much higher percentage use direct marketing. Over three-quarters of certified organic vegetable producers surveyed by USDA in 1994 had less than 10 acres of vegetables, compared with only 35 percent of the conventional vegetable producers. Nearly half of the surveyed organic producers, and the majority of those with under 10 acres, reported marketing their vegetables directly to consumers through farmers' markets, consumer subscriptions, restaurants, and other direct marketing outlets.

California producers grew nearly half of the organic vegetables certified in 1997, using six private groups for certification. California growers produced over 4,400 acres of lettuce, about 2,600 acres of carrots, and nearly 2,000 acres of tomatoes in 1997. Colorado, Washington, Arizona, Oregon, Minnesota, New York, Illinois, and Florida had at least 1,000 acres of organic vegetables each in 1997, certified by a mix of state and private groups. Washington growers had over 1,400 acres of organic tomatoes, and Arizona had over 1,200 acres of certified organic lettuce.

Demand for carrots was strong during the ERS study period (1992-97), and monthly organic prices in the Boston wholesale market, for example, averaged 110 percent higher than for conventionally grown carrots. Prices for organic processing tomatoes were consistently over 100 percent higher than for conventional processing tomatoes at the farm gate level during

USDA Proposed Rules for Organic Farmers & Handlers

Purchasers of organic foods would be able to rely on uniform and consistent national standards for defining the term "organic," under USDA's new proposal for regulating organic production and handling in the U.S. The proposal, announced March 7, 2000, addresses the methods, practices, and substances used in producing and handling organic crops, livestock, and processed foods. It includes requirements for labeling, certification, and the accreditation of certifiers.

The new proposal reflects recommendations made in over 275,000 responses to USDA's initial proposal in December 1997. Currently, organic food is certified by various state and private organizations that apply their own standards in defining the term "organic." The proposed regulations are similar to most of the standards organic producers and handlers currently use, and are intended to be flexible enough to accommodate the wide range of operations and products grown in the U.S. The new rules require operations that grow or process organic foods to be certified by USDA-accredited certifying agents. USDA-certified operations may label their products as organic.

Farms and handling operations that sell less than $5,000 per year of organic agricultural products are exempt from certification. These producers and handlers must still abide by national standards for organic products and must comply with labeling requirements. Retail food establishments that sell organically produced agricultural products but do not process them are also exempt from certification.

The proposed regulations would prohibit use of genetic engineering (genetic modification), irradiation, and sewer sludge in the production of organic foods. The production requirements apply to the way the product is created, not to measurable properties of the product itself. Although specific practices and materials used by individual organic operations may vary, the proposed standards require every aspect of organic production and handling to comply with provisions of the Organic Foods Production Act of 1990, which the new rules would implement. The standards would include a National List of approved synthetic, and prohibited nonsynthetic, substances for use in organic production and handling. Producers must operate under an organic system plan approved by an accredited certifying agent.

Crop Standards

For all crop products intended for sale as organic, the proposed organic crop production standards detail the following:

- land would have no prohibited substances applied to it for at least 3 years before the harvest of an organic crop;
- crop rotation would be implemented;
- use of genetic engineering (included in excluded methods), irradiation, and sewage sludge is prohibited;
- soil fertility and crop nutrients would be managed through tillage and cultivation practices, supplemented with animal and crop waste materials and allowed synthetic materials;
- preference would be given to use of organic seeds and other planting stock, but a farmer could use nonorganic seeds and planting stock under certain specified conditions;
- crop pests, weeds, and diseases would be controlled primarily through management practices including physical, mechanical, and biological controls; when these practices are not sufficient, a biological, botanical, or allowed synthetic substance may be used.

Livestock Standards

The proposed livestock standards apply to animals used for meat, milk, eggs, and other animal products represented as organically produced, and provide details of the following:

- animals for slaughter must be raised on an organic operation from birth, or no later than the second day of life for poultry;
- producers would be required to feed 100 percent organically produced feeds to livestock but could also provide allowed vitamin and mineral supplements;
- organically raised animals could not be given hormones or antibiotics;
- preventive management practices, including the use of vaccines, would be used to keep animals healthy;
- producers would be prohibited from withholding treatment from a sick or injured animal; however, animals treated with a prohibited medication would be removed from the organic operation;
- all organically raised animals would have to have access to the outdoors, including access to pasture for ruminants, and animals could be temporarily confined only for reasons of health, safety, or to protect soil or water quality.

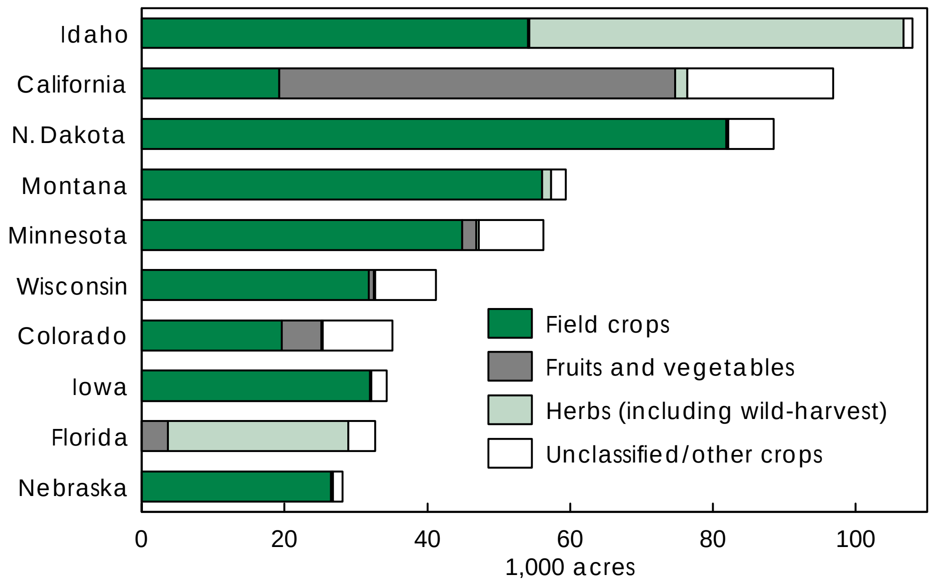
The public will be able to submit comments on this revised proposed rule in both written and electronic form for 90 days after publication in the *Federal Register* March 13, 2000. USDA will review and categorize comments, make any necessary revisions to the proposed rule, and submit a final rule for publication in the *Federal Register*. Discussion of public comments will be included in the final rule.

Implementation of the regulations, starting with the first round of certifier accreditation, can begin when the final rule is published. During the first 18 months of implementation, all clients of certifiers are considered USDA-certified immediately upon USDA accreditation of their certifier. Certified operations must comply with the national standards and will be assessed by their certifier on the anniversary date of their original certification.

For further information, visit USDA's Agricultural Marketing Service/National Organic Program (NOP) website at www.ams.usda.gov/nop/, or contact NOP staff at (202) 720-3252 or NOP.Webmaster@usda.gov. Official public comment period on the revised proposed rule is March 13 through June 12, 2000.

Commodity Spotlight

Idaho Leads in Organic Crop Acreage



Certified organic cropland, top 10 states; U.S. total equals 850,177 acres. 1997 data.
Economic Research Service, USDA

1990-96, according to private-sector price reports.

Organic vegetable production for national distribution and export was concentrated in only a few states in 1997—California, for example, had six times more certified organic vegetable acreage than any other state—but growers in at least 43 states had some acreage devoted to organic vegetables. Over 2 percent of vegetable acreage in top vegetable producing states, such as California and Arizona, as well as minor producing states, such as Massachusetts, Maine, and Vermont, was managed under organic farming systems in 1997. Vermont has an organic farming association that has been promoting local organic agriculture for almost three decades, and that state had the highest percentage (24 percent) of its vegetable acreage under organic management.

Organic apples, citrus, grapes, and other fruits and nuts were grown on over 49,000 acres in the U.S. in 1997. Grapes accounted for 39 percent of total acreage certified that year, followed by apples (18 percent), citrus (12 percent), and tree nuts (10 percent). California growers produced almost all of the organic grapes. Organic apples were produced in 16 states, and Arizona, California, Washington, and Colorado had between 1,000 and 3,000 acres each.

California, Florida, Arizona, and Texas were the top citrus producers (organic and nonorganic). The Texas Agricultural Extension Service indicates that organic citrus production potential is high in that state because most of the sucking insect and mite pests are under partial biological control, and cultural techniques and plant material quarantines effectively address many major citrus diseases. Nine states produced organic tree nuts in 1997 on 4,908 acres, with California growers producing 3,542 acres of the nuts (almonds, walnuts, and pistachios) and Texas producing 913 acres (mostly pecans).

Certified organic herbs were produced for culinary and medicinal uses in 32 states on over 6,400 acres in 1997, led by California and Washington. State and private agencies also certified over 80,000 acres of forests, scrublands, and other natural areas in three states for wild-harvesting organic herbs and other crops in 1997. The Idaho Department of Agriculture's Organic Certification Program, for example, certified 52,000 acres of certified organic wild-harvested St. John's wort, a popular medicinal herb, in 1997. Certified organic cut flowers were produced in a dozen states on 288 acres in 1997, and mushrooms, flowers, and other crops were also organically grown in 377,296 square feet of greenhouses in 10 states in 1997.

Adoption Varies For Grains & Livestock

Organic farmers grow a diversity of field crops because of the key role crop rotation plays in controlling weeds and maintaining fertility in organic farming systems. Data from organic certification agencies indicate that organic farmers are growing major grains and oilseeds on a small scale, along with a host of other field crops. Only one-tenth of a percent of the U.S. corn and soybean crops was managed organically in 1997, and over 1 percent of the oats and dry pea crops was certified organic. Over 3 percent of the U.S. millet crop, 6 percent of the flax crop, and nearly one-third of the U.S. buckwheat crop was certified organic.

Certified organic grains were grown in 35 states in the U.S. in 1997. North Dakota was the top producer with over 50,000 acres. Wheat was produced under certified organic farming systems on over 125,000 acres in 1997, corn was grown on over 42,000 acres, and oats and barley were each grown on almost 30,000 acres. Other certified organic grain crops—sorghum, rice (including wild rice), spelt, millet, buckwheat, and rye—were grown on less than 15,000 acres each. Montana had the most acreage of certified organic wheat, Minnesota led in corn and buckwheat acreage, and North Dakota had the most acreage of oats, millet, and rye in 1997. Idaho had the most certified organic barley acreage, and California had the most certified organic rice.

ERS estimates of 1997 certified organic wheat and corn acreage are 31 percent greater than estimates by the private sector for 1995. U.S. farm-level organic corn prices averaged 35 percent higher than U.S. cash prices for conventional corn in 1995, and the premium gap widened in 1996 and 1997, according to an analysis of private-sector data by a South Dakota State University economist. Hard red spring wheat organic prices were 50 percent or more higher than U.S. cash and futures prices for conventionally grown spring wheat. ERS estimates of 29,748 acres of certified organic oats in 1997 is more than double the private sector estimates for 1995, as organic oat prices averaged 35 percent higher than U.S. cash prices for conventional oats in 1995 and the price spread widened in 1996 and 1997.

The ERS estimate of certified organic soybean acreage in the U.S. in 1997, about 82,000 acres, is 74 percent greater than the private-sector estimate of 47,200 acres for 1995. Expansion of organic soybean acreage was due in part to annual organic soybean prices, which averaged nearly double or more the U.S. cash and nearby futures prices of conventional soybeans between 1995 and 1997. Greater use of specialty markets by organic grain producers might partly explain these price differentials.

Certified organic dry peas and lentils were grown on 5,187 acres in the U.S. in 1997, and Montana and North Dakota were the leading producers. Certified organic dry beans were grown on 4,641 acres in the U.S. in 1997, and California was the biggest producer. Certified organic oilseeds—including flax and sunflowers—were grown on 31,433 acres in 18 states in 1997, with North Dakota, California, and Utah the leading states.

Producers grew 62,460 acres of certified organic alfalfa hay, 11,579 acres of grass silage and haylage, and 42,758 acres of unclassified hay and silage in 1997. Thirty-nine states had certified organic hay and silage production, ranging from under 100 acres each in Arkansas, New Hampshire, Nevada, Delaware, Rhode Island, and West Virginia to over 5,000 acres each in Idaho, Wisconsin, New York, North Dakota, Minnesota, Montana, Vermont, and South Dakota. Acreage of these crops expanded 51 percent between 1995 and 1997, as the number of certified organic milk cows more than doubled during that period.

Organic meat and poultry markets have lagged those for crops, partly because meat and poultry could not be labeled as organic until February 1999, when a provisional label was approved by USDA. Food crops and nonmeat animal foods (eggs and dairy products) are regulated by the Food and Drug Administration, and have been allowed to carry an organic label throughout the 1990's. While the number of certified organic beef cows, hogs and pigs, and sheep and lambs declined sharply during the study period, 1992-97, the number of dairy cows and layer hens increased sharply. The market for organic meat products is beginning to grow now that organic labeling is permitted, and is starting to push up use of certified organic pasture and rangeland and demand for certified organic feed grains.

Farmers and ranchers raised certified organic cows, pigs, and sheep in 23 states in 1997. Dairy cows were managed organically in 13 states in 1997, and New York was the leading state with 3,386 animals, followed by Wisconsin (2,509 dairy cows) and Minnesota (2,425 dairy cows). Pennsylvania, California, and Maine also had over 1,000 organic dairy cows each. The number of certified organic milk cows in the U.S. nearly tripled between 1992 and 1994, and more than doubled between 1994 and 1997. Organic dairy sales in mainstream supermarkets were up 200 percent or more—albeit from a small base—in Baltimore, Phoenix, Detroit, Boston, and other major markets between December 1997 and December 1998, according to industry sources.

The U.S. had 537,826 certified organic layer hens in 1997, up sharply from 47,700 in 1994. California was the leader in organic poultry production, with 350,000 organic birds, followed by New York (161,304 birds) and Virginia (62,400 birds). Other organic animal specialties, including goats, fish, and bee colonies, were certified in several states.

Organic Production Expanding

While adoption of organic farming systems showed strong gains between 1992 and 1997 and the adoption rate continues high, the overall adoption level is still small—only two-tenths of 1 percent of all U.S. cropland was certified organic in 1997. Obstacles to adoption include large managerial costs and risks of shifting to a new way of farming, limited awareness of organic farming systems, lack of marketing and technical infrastructure, inability to capture marketing economies, insufficient numbers of processors and distribu-

Measuring Adoption of Organic Farming Systems in the U.S.

The ERS study of expansion of organic farming analyzed 1997 data from 40 state and private certifiers. Uncertified production was excluded, even though it may represent a large segment of organic production, because of difficulty in determining production criteria used by uncertified growers. A similar approach was used in USDA's 1992-94 analysis of U.S. organic production.

Membership directories, acreage reports, and other sources of certified acreage and livestock data were obtained from U.S. certifiers and used to calculate 1997 estimates of certified acreage in the U.S. Eleven of the private certifiers provided certification services in more than one state in 1997. Several of these certifiers provided services in only a few adjacent states, but three of them provided services in 20 states or more. Acreage reports and other data sources for most of these national certifiers, particularly the larger ones, showed crop acreage and livestock numbers by state. The California Agricultural Statistics Service obtained data from one of the certifiers for this study.

Certified organic acreage and livestock estimates were calculated by state and by commodity, with several exceptions. First, several certifiers had already updated 1997 data records with data for 1998, and their 1998 data were used in this report. Second, data that could not be broken down by commodity are reported at an aggregate level. The amount of acreage that could not be classified by commodity varied by farm enterprise (9 percent of grain acreage, 4 percent of legume acreage, 40 percent of oilseed and hay acreage, 38 percent of vegetable acreage, and 21 percent of fruit acreage). Finally, some data could not be classified by state (well under 1 percent of the total) and are included in a regional category.

Commodity Spotlight

Selected USDA Programs & Projects to Facilitate Organic Production

Market facilitation

Agricultural Marketing Service, USDA—National Organic Program, www.ams.usda.gov/nop/

Foreign Agricultural Service, USDA—Organic export promotion, *Organic Perspectives* newsletter, www.fas.usda.gov/htp/

Research and education

Cooperative State Research, Education, and Extension Service, USDA—Sustainable Agriculture Research and Education Program, www.sare.org/san/

Cooperative State Research, Education, and Extension Service, USDA—National Research Initiative Competitive Grants, includes Biologically Based Pest Management Program, www.reeusda.gov/crgam/nri/programs/progdesc/biobased.htm, and others

Cooperative State Research, Education, and Extension Service, USDA—Small Farm Program, www.reeusda.gov/agsys/smallfarm/

National Agricultural Library, USDA—Alternative Farming Systems Information Center, www.nal.usda.gov/afsic

Agricultural Research Service, USDA-Beltsville Agricultural Research Center—the Sustainable Agriculture Demonstration Site, teasdalej@ars.usda.gov, and the Farming Systems Project (includes organic trials), cavigelm@bs.ars.usda.gov

Agricultural Research Service, USDA—New organic farming systems research, with farmer participation, in several locations including Salinas, CA, www.pwa.ars.usda.gov/salinas

Economic Research Service, USDA—Organic production and marketing research, www.ers.usda.gov; cgreene@ers.usda.gov and lkglaser@ers.usda.gov

Risk reduction

Risk Management Agency, USDA—Organic insurance pilot program under development, Sharon Hestvik (202) 720-6685, Sharon_hestvik@wdc.fsa.usda.gov

Resource conservation

Natural Resources Conservation Service, USDA—Conservation practice standards, www.ftw.nrcs.usda.gov/tech_ref.html

tors, and limited access to capital. State and private certifier fees for inspections, pesticide residue testing, and other services represent an added production expense for organic producers. And farmers can't command certified organic price premiums during the 3-year required conversion period before crops and livestock can be certified as organic.

Europe has converted a much higher level of farmland to organic management—about 1.5 percent of total agricultural land was organic in 1997—and adoption levels ranged from 10 percent in Austria and 7 percent in Switzerland to 2 percent in Germany and 0.4 percent in the U.K. Most countries in Europe have offered direct financial support for conversion to organic farming since the late 1980's.

Several states in the U.S. have begun providing financial support for conversion to organic farming systems as a way to capture environmental benefits of these systems. In Iowa, organic crop production has been an approved state conservation practice since 1997, and is eligible for cost-share support from USDA's Environmental Quality Incentive Program. In Minnesota, the Department of Agriculture implemented an Organic Cost Share Program in 1999, which is designed explicitly to reimburse Minnesota producers for up to two-thirds of the cost for organic inspection and certification. Also, several of the state-run certification programs in the U.S. charge nominal or very low fees to encourage organic production. A recent policy analysis from the University of Georgia suggests that these state incentive payments will be helpful for growers who are already interested in organic production, but cautions that more obstacles need addressing to attract most large producers.

In addition to government efforts in developing national certification standards, and in expediting interstate commerce in organic products, USDA has been facilitating and promoting organic exports for several years. A pilot program to offer organic crop insurance is also under development. Several other USDA research programs have focused on organic and sustainable farming systems since the 1990's, and more such programs are beginning to take shape. AO

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World Agriculture & Trade

Debra Tropp, Agricultural Marketing Service

Free Trade Area of the Americas: What Are the Benefits For U.S. Agriculture?

Progressive elimination of trade and investment barriers within the Western Hemisphere is the goal of the Free Trade Area of the Americas (FTAA), a regional agreement now under negotiation among 34 countries, including the U.S. In the interest of free trade, participants have agreed that "all tariffs are on the negotiating table," including tariffs on agricultural imports. With comprehensive global negotiations under the World Trade Organization having faltered at the Seattle meeting, regional trade pacts such as FTAA become more important for expanding trade and investment opportunities.

The FTAA is one of several regional trade agreements (RTA's) in which the U.S. participates. Others include the North American Free Trade Agreement (NAFTA) and the Asia Pacific Economic Cooperation (APEC) forum. The FTAA process began in December 1994, when President Clinton and 33 other heads of state made a commitment at the Miami Summit of the Americas to liberalize trade and financial markets in the region.

Two developments helped lay the groundwork for the FTAA. First was the solidification of democracies. By 1994, almost all states in the Americas had adopted a democratic form of government. Among the goals of the FTAA is to advance and strengthen democratic values and institutions in the hemisphere by enhancing prosperity through freer trade. Second, during the previous decade many Western Hemisphere countries, including the U.S., had shifted toward policies that emphasized free markets, less government intervention, and more open and competitive trade relations. The FTAA principles of open markets, hemispheric integration, and sustainable development should reinforce the greater market orientation of economic policy in the region.

Formal negotiations, which began in April 1998, are expected to conclude by 2005. Negotiations are proceeding in nine separate groups: agriculture; market access; investment; services; government procurement; dispute settlement; intellectual property rights; subsidies, antidumping and countervailing duties; and competition policies. Specific objectives have been identified for each negotiating group, including agriculture. While agriculture is being addressed in a separate negotiating group, it will also be affected by negotiations in other groups, such as market access and subsidies, anti-dumping, and countervailing duties. There are procedures to ensure that the work of separate groups is coordinated. Each group is developing a chapter for the final agreement, which is expected to be a balanced, comprehensive, single undertaking, with consensus on all chapters.

What will the pact mean for U.S. agriculture? Implications for U.S. producers are likely to have several dimensions. Foremost, the FTAA will expand market opportunities for U.S. agricultural products in the hemisphere by progressively eliminating tariffs and nontariff barriers, facilitating investment, and helping to lock in members' unilateral policy reforms. The agreement will also consolidate the many subregional free trade agreements in the Western Hemisphere, such as the MERCOSUR free trade area among Brazil, Argentina, Uruguay, and Paraguay, which can otherwise put nonparticipating countries, including the U.S., at a competitive disadvantage. Provisions of these many subregional trade pacts are certain to influence the outcome of the FTAA. Finally, because the FTAA will be negotiated concurrently with the opening of multilateral negotiations on agriculture under the WTO, scheduled for later in 2000, it could help define and advance the global talks, providing benefits for U.S.

The FTAA Chronology

Summit of the Americas

1994	Miami, Florida
1998	Santiago, Chile

Trade Ministerials

1995	Denver, Colorado
1996	Cartagena, Colombia
1997	Belo Horizonte, Brazil
1998	San Jose, Costa Rica
1999	Toronto, Canada

Negotiating Group on Agriculture
(four to five meetings annually)

May 1998–February 2001
Miami, Florida
March 2001–February 2003
Panama City, Panama
March 2003–December 2004
Mexico City, Mexico

agriculture that extend beyond the Western Hemisphere.

FTAA Will Expand U.S. Ag Trade

Because Western Hemisphere countries' tariffs on agriculture tend to be higher than on other products, the FTAA is expected to lead to more substantial increases in U.S. agricultural trade than in other U.S. sectors. A recent analysis by USDA's Economic Research Service concluded that when tariffs are eliminated in the FTAA, U.S. agricultural exports to and imports from other Western Hemisphere countries will increase annually in the short run (first 5 years after the agreement) by 8 and 6 percent respectively, and by 8 and 7 percent in the medium run (5 to 15 years). Total U.S. agricultural exports and imports will increase by 2 and 3 percent respectively in the short run, and by 1 and 3 percent in the medium run. In the long run (beyond 15 years), U.S. agricultural exports could continue to grow, but at a slightly lower rate than in the early period following trade liberalization. U.S. agricultural export growth and the more efficient resource reallocation that follows reduction of trade barriers will strengthen U.S. farm income.

The FTAA will benefit both the U.S. and other participants. Productivity gains in Latin American countries, as they open their markets to international competition, are expected to increase their incomes and demand for U.S. products. Trade liberalization is generally presumed to advance productivity through two channels: it allows greater imports of goods that embody technological advances, and it creates greater incentives to save and invest. These dynamic gains from trade liberalization are likely to do more than tariff reduction to increase U.S. agricultural trade under the FTAA. Productivity gains in Latin American countries will increase their demand for U.S. products as well as their competition with the U.S. in third-world markets.

The impacts on U.S. trade vary among commodities. An FTAA should increase the wheat market share of the U.S. and Canada in Brazil. Gains in U.S. exports of corn, soybeans, and cotton in the hemisphere are expected, while there may be little impact on U.S. rice, meats, and dairy trade. The agreement could have major implications for U.S. sugar, peanuts, and orange juice. U.S. sugar prices, production, and exports could decline significantly, and imports could increase, giving U.S. consumers more access to inexpensive imported sugar. U.S. peanut producers in the traditional quota production areas of the Southeast might have difficulty competing at world prices. Removal of tariffs may create incentives to import less-expensive Brazilian orange juice, which may displace some Florida juice.

In addition to the elimination or reduction of tariffs and other measures, a prominent agricultural topic in the FTAA negotiations is sanitary and phytosanitary (SPS) measures. Over the next 5 years, one task of FTAA negotiators will be to define a method and a process to ensure that SPS measures applied in the hemisphere are consistent with the WTO Agreement on the Application of SPS Measures, which became effective in June 1995.

The WTO's SPS agreement imposed disciplines on members' use of measures to protect human, animal, and plant life from foreign pests, diseases, and contaminants. These disciplines were intended to protect the right of member countries to adopt trade measures designed to protect human health and the environment, while minimizing the potential for disguising trade barriers as SPS measures.

Objectives of the Negotiating Group on Agriculture of the Free Trade Area of the Americas

- Progressively eliminate tariffs and nontariff barriers, as well as other measures with equivalent effects, which restrict trade between participating countries. All tariffs will be subject to negotiation. Various trade liberalization timetables may be negotiated to facilitate the integration of smaller economies and their full participation in the FTAA negotiations.

- Ensure consistency of the FTAA with the WTO Sanitary and Phytosanitary Agreement, so that SPS measures will be applied only to achieve the appropriate level of protection for human, animal, or plant life or health; will be based on scientific principles; and will be maintained only with sufficient scientific evidence.

- Eliminate agricultural export subsidies affecting trade in the hemisphere.

- Identify other trade-distorting practices for agricultural products, including those that have an effect equivalent to agricultural export subsidies, and bring them under greater discipline.

- Incorporate progress made in the multilateral negotiations on agriculture to be held according to Article 20 of the Uruguay Round Agreement on Agriculture, as well as the results of review of the SPS Agreement.

U.S. Trade Partners in the Western Hemisphere

North America: Canada, Mexico (NAFTA)
South America: Argentina, Brazil, Paraguay, Uruguay (MERCOSUR); Bolivia, Colombia, Ecuador, Peru, Venezuela (Andean Community); Chile
Central American region: Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama
Caribbean region: Anguilla, Antigua and Barbuda, Aruba, Bahamas, Barbados, Bermuda, Cayman Islands, Dominica, Dominican Republic, Grenada, Guadeloupe, Haiti, Jamaica, Leeward and Windward Islands, Martinique, Montserrat, St. Kitts and Nevis, St. Lucia, St. Vincent and Grenadines, Trinidad and Tobago, Turks and Caicos Islands

U.S. Trade with the Americas

The U.S. is by far the world's largest agricultural exporter. As the richest and most populous country in the Americas, it is also the region's largest market for agricultural products. Total agricultural trade between the U.S. and other countries of the Americas is growing rapidly, doubling since 1989. In terms of *total value*, U.S. agricultural imports from the Americas—$19.9 billion in 1998—are only slightly higher than U.S. exports to the region—$18.5 billion. In terms of *shares of U.S. trade*, however, the region is substantially more important as a source of imports for the U.S. than as a destination for U.S. exports. About 54 percent of all U.S. agricultural imports come from Western Hemisphere countries, while about 36 percent of U.S. agricultural exports go to the region.

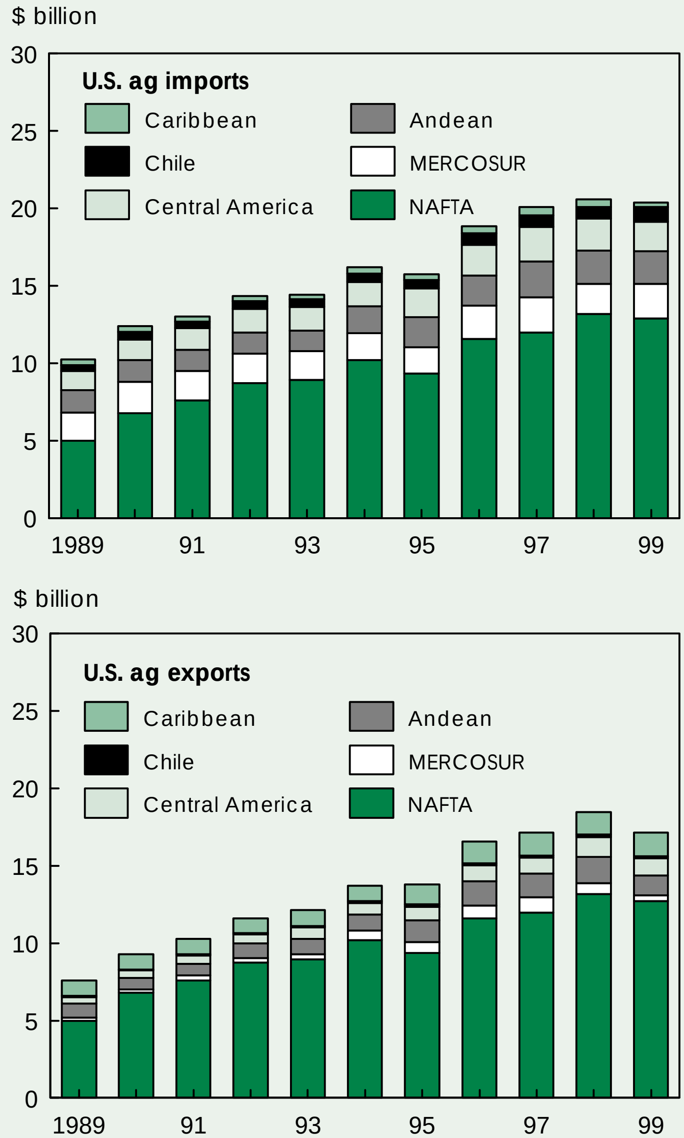
NAFTA trading partners (Canada and Mexico) dominate U.S. agricultural trade, together supplying about 34 percent of total U.S. imports and taking 25 percent of total U.S. agricultural exports. This asymmetry in U.S. import and export market shares is even more pronounced for other Western Hemisphere countries, which together supply almost 20 percent of total U.S. agricultural imports but purchase only 10 percent of U.S. agricultural exports.

The U.S. is a vital source of agricultural imports for the region. About 36 percent of all U.S. agricultural exports go to the Americas, which accounts for almost 45 percent of the agricultural goods imported by the region. The dichotomy is most striking for the Central American and Caribbean countries, which together take about 5 percent of all U.S. agricultural exports, but where the U.S. shipments account for almost 20 percent of their agricultural imports. Similarly, about 3 percent of U.S. agricultural exports go to the Andean countries, while the U.S. supplies more than 28 percent of their agricultural imports.

U.S. dominance is strongest within NAFTA, where the U.S. supplies about two-thirds of agricultural products imported by Canada and Mexico (25 percent of U.S. ag exports), and weakest in MERCOSUR, with only 8 percent of that market (1 percent of all U.S. ag exports). Within NAFTA, the U.S. maintains a strong market share not only for total agriculture but also for each of the major product groups (grains, oilseeds, livestock products, and horticulture). In MERCOSUR, where the U.S. share of total agricultural imports is relatively low, the U.S. share of each of the major product groups is also low. This pattern suggests that proximity of markets, factor endowments, and perhaps broad-based trade agreements play a strong role in determining where U.S. exports dominate.

Proximity to Canadian and Mexican markets and participation in NAFTA provide U.S. farmers a strong competitive edge. Conversely, distance from the Southern Cone and exclusion from MERCOSUR create substantial impediments to U.S. agricultural exports. The same pattern does not hold for the Andean Group or for Central America and the Caribbean, where U.S. market shares vary considerably by commodity category, with relatively weak U.S. exports of horticultural and consumer goods and relatively strong U.S. exports of bulk and intermediate goods.

NAFTA Countries Dominate U.S. Agricultural Trade In the Western Hemisphere



In 1998 and 1999, the Western Hemisphere was the source of 54 percent of total U.S. ag imports and the destination for 36 percent of U.S. ag exports.

Economic Research Service, USDA

Major Trade Agreements in the Western Hemisphere

Regional scope agreements (cover a large number of countries in the region)

LAIA/ALADI—-Latin American Integration Association (officially ALADI)
Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Uruguay, Venezuela

Customs unions (members remove trade barriers among participants, and set a common level of trade barriers for outsiders)

Andean Community
Bolivia, Colombia, Ecuador, Peru, Venezuela

CACM
Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua

CARICOM
Bahamas, Jamaica, Belize, Montserrat, St. Kitts and Nevis, Antigua and Barbuda, Dominica, Saint Lucia, Barbados, St. Vincent and Grenadines, Trinidad and Tobago, Grenada, Guyana, Suriname

MERCOSUR
Argentina, Brazil, Paraguay, Uruguay

Free trade agreements (members remove trade barriers among participants)

NAFTA
Canada, Mexico, U.S.

Group of Three
Colombia, Mexico, Venezuela

Bolivia – Mexico
Canada – Chile
Central America – Dominican Republic
Costa Rica – Mexico
Chile – Mexico
Mexico – Nicaragua

Nonreciprocal agreements (concessions are one way, usually granted by an industrialized country to less developed countries)

Colombia – CARICOM

Venezuela – CARICOM

U.S. – Caribbean Basin Initiative
CBI countries: Antigua and Barbuda, Bahamas, Barbados, Belize, British Virgin Islands, Costa Rica, Dominica, Dominican Republic, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Monserrat, Dutch Antilles, Nicaragua, Panama, St. Kitts and Nevis, St. Lucia, St. Vincent and Grenadines, Trinidad and Tobago

U.S. – Andean Trade Preference Act
ATPA countries: Bolivia, Colombia, Ecuador, Peru

Bilateral agreements: economic complementation free and preferential trade partial scope (not as comprehensive as customs unions and free trade agreements)

Argentina – El Salvador
Bolivia – Guatemala
Brazil – Honduras
Chile – Mexico
Colombia – Nicaragua
Costa Rica – Panama
Dominican Republic – Peru
Ecuador – Venezuela

Source: Foreign Trade Information System, Organization of American States.
Economic Research Service, USDA

FTAA & Regional Trade Pacts

Regional trade agreements in the Western Hemisphere have been referred to as a spaghetti bowl, a description of the region's crisscrossing web of preferential trade pacts. Some of the 30 RTA's in force in the Western Hemisphere date back to the 1950's and 1960's. These preferential agreements are of several types. Free trade agreements, such as NAFTA, provide for duty-free treatment on most goods traded among the partners, while each member country maintains its own tariffs on nonmembers' products. In a customs union, such as MERCOSUR, members erect common external tariffs as well as liberalize internal trade. In nonreciprocal agreements, such as CARICOM's agreements with Venezuela and Colombia, access to a larger market, generally in a more developed country, is offered without demands for reciprocity.

Whether RTA's are beneficial or detrimental to the world trading system has been debated for decades. Some argue that these agreements are inherently discriminatory because they extend preferences to pact members and are thus inconsistent with the global community's commitment to multilateral principles under the General Agreement on Tariffs and Trade (GATT), the WTO's precursor. Regional trade pacts have been allowed as an exception to global trade rules, provided they meet the criteria outlined in GATT Article 24, which are intended to minimize RTA's trade diverting impacts.

An added criticism of the Western Hemisphere's spaghetti bowl of trade pacts is that the multiple rates create an inefficient system of preferences. But, others argue that whenever a regional trade agreement achieves trade liberalization, the world is better off, in part because of the expectation that any trade liberalization will have a dynamic effect that may eventually lead to greater global trade liberalization.

The history of trade pacts in Latin America lends support to both viewpoints on regionalism. Early agreements were often protectionist. They tended to exclude sensitive sectors from trade liberalization, particularly agriculture, and attempted to create protected export markets by adopting or maintaining high tariffs against nonmembers.

Western Hemisphere trade pacts over the past decade have had a different character. Some have been used to consolidate the greater market orientation of members' trade policies. The North American Free Trade Agreement (NAFTA), for example, helped to lock in Mexico's policy reforms of the late 1980's, including its unilateral trade liberalization and the reform of its foreign investment code. MERCOSUR eliminated most tariffs among its members, as well as lowering tariffs against the rest of the world.

The FTAA process is certain to be affected by the presence of established RTA's within the region. Countries in some regional trade pacts are negotiating as a bloc, at least on some issues, to advance their common interests within the FTAA. Members negotiating as blocs are MERCOSUR, the Andean Pact, and the CARICOM union of Caribbean countries. This development has helped solidify some issues, such as the high priority the FTAA has placed on facilitating the full participation of smaller and developing economies in the free trade pact.

By including all sectors in trade liberalization, the FTAA promises to achieve more in agriculture than has so far been achieved in some of the region's other trade pacts. Agriculture is a sensitive sector, particularly in smaller economies where a large share of the population depends on it for a livelihood. Agricultural goods are not included in free trade agreements of the Central American Common Market (CACM), the Latin American Free Trade Association (ALADI), or the Group of Three, which includes Colombia, Mexico, and Venezuela. Remaining trade barriers have become irritants among Latin American trade partners, particularly practices like price bands. Most agricultural goods are included in NAFTA, MERCOSUR, and CARICOM, with some notable exceptions, including sugar, dairy, poultry, and eggs.

Agreements that include agriculture can put the U.S. at a competitive disadvantage when the U.S. is not a member. In MERCOSUR, for example, U.S. exporters have benefited from lower MERCOSUR tariffs on goods shipped by outside countries, but U.S. exporters now face tariff differentials in the MERCOSUR market that favor member suppliers. Likewise, Chilean bilateral free trade agreements with Canada and Mexico provide duty-free treatment on most of their agricultural products, but Chile maintains an 11-percent most-favored-nation tariff on goods from other countries, including the U.S. Discriminatory subregional trade preferences against nonmembers in the Western Hemisphere will disappear when the pacts are subsumed into the FTAA.

FTAA & the WTO

Although the full round of global negotiations under the WTO has been postponed, negotiations on agriculture will begin as scheduled, later in 2000. FTAA talks on agriculture will parallel those in the WTO over the next several years. The two negotiations will likely influence each other.

One objective of the FTAA has been to maintain consistency between the regional trade pact and the WTO. This is being done by building upon the foundations laid by the WTO in areas such as SPS regulations, and by defining methods for incorporating into the FTAA any progress made in the WTO venue. In the area of SPS, the FTAA will work to achieve full implementation of the SPS agreement within the hemisphere. Progress within the FTAA on complex topics such as equivalence and harmonization of standards could help to advance the multilateral process if a regional consensus can be achieved.

The global scope of some issues may limit the ability of a regional pact to effectively address them. For example, agricultural export subsidies, which are used mainly by the European Union (EU), cannot be fully disciplined within the FTAA. On issues such as these, the most effective role for the FTAA will be to try to advance progress in the WTO by solidifying a common position. In the case of export subsidies, FTAA members have agreed to work within the WTO toward eliminating export subsidies and prohibiting their reintroduction in any form. Domestic support is also addressed more effectively in multilateral, rather than regional, negotiations.

Delay in the Seattle round of multilateral trade negotiations has sparked greater interest in regional trade pacts as an alternative route toward trade and investment liberalization. In agriculture, the planned opening of agricultural trade negotiations at the WTO means that both regional and multilateral paths can be pursued. Some have argued that regional trade pacts can derail multilateral negotiations by creating protectionist fortresses with an interest in preventing further WTO disciplines on agricultural trade. In the case of the FTAA, the commitment of the pact to implement and advance WTO disciplines suggests that the FTAA can complement U.S. efforts to liberalize agriculture in a multilateral setting. AO

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Related Reading

Free Trade in the Americas: International Agriculture and Trade Report
http://usda.mannlib.cornell.edu/reports/erssor/international/wrs-bb/1998/trade/

International Financial Crises and Agriculture: *International Agriculture and Trade Report*
Available soon on the Economic Research Service website www.ers.usda.gov

John Link

Emerging Trade Issues for Developing Countries

Developing countries are increasingly active participants in multilateral trade negotiations. Of the 135 countries in the World Trade Organization, 70 percent are self-designated as developing countries. In contrast, only 48 countries participated in the multilateral Kennedy Round negotiations in the mid-60's, and only about half were developing countries. Moreover, current and future WTO negotiations will involve significant participation by developing countries, both in setting the agenda and in forging various agreements. The developing countries attribute their minor role in the Uruguay Round to lack of understanding of multilaterally agreed-upon rules governing global trade and to lack of resources to fully participate in the negotiations.

Developing countries are realizing that it is in their interest to help shape rules on global trade policy. Since agriculture often provides a significant amount of the export earnings of developing countries, major policy changes influencing global agricultural trade directly affect their earnings and their financing of imports. The Uruguay Round Agreement on Agriculture (URAA), negotiated during 1986-94, for the first time developed multilateral rules for agriculture similar to those governing trade in non-agricultural products.

Developing countries are not necessarily a monolithic group regarding trade issues. For example, developing countries, particularly the lowest income countries, were afforded trade concessions under the URAA Special and Differential Treatment (SDT) provision, allowing them to make relatively smaller tariff reductions over longer periods of time compared with developed countries, and largely exempting the poorest or "least developed countries" from any major change. Countries benefiting from SDT, especially low-income net food importers, tend to favor continuation of the provision. On the other hand, middle-income developing countries like Argentina and Brazil, leading food exporters, advocate freer trade in agriculture, arguing that SDT lowers the economic benefits of trade reform. Policy concerns of developing countries also vary by region and by type of commodities they trade.

This article highlights major agricultural trade issues of importance to lower income developing countries in Latin America, South Asia, and Sub-Saharan Africa that are likely to emerge in future negotiations. Commodity trade flows, regional economic policies, and unsettled Uruguay Round issues are reviewed.

Commodities & Policy Issues Vary by Region

The specific commodities that are traded influence the trade issues that are important to developing countries. Most smaller and lower income developing countries export only a few primary commodities (such as sugar, cocoa, and bananas) and depend on imports for many goods, including food. Their high-priority trade concerns are limited and are concentrated on only a few export commodities. In larger economies, trade interests and issues are diverse and their negotiating agendas are correspondingly larger.

Historical patterns of trade influence many countries' trade interests. More than half of developing countries' trade is with industrial countries. Moreover, geographical proximity influences trade patterns. For example, the U.S. is the most important trading partner of Latin American countries. Consequently, many of these countries are more concerned with changes in U.S. trade policies than with changes in other industrial countries.

Since the late 1980's, most developing countries have made major policy changes liberalizing their agricultural markets. Economic and trade responses have varied, depending on their policy adjustments and resource endowments. Agriculture's share of total trade, in general, has declined in most developing countries in recent decades as trade in industrial goods has rapidly increased. However, agriculture still represents a larger portion of total trade for developing countries than for developed countries.

The *Latin American and Caribbean* (LAC) region is host to a wide variety of agricultural trading interests. Argentina and Brazil are two of the largest net food exporters among developing countries. But if these two countries are excluded, the region is a net food importer. Most countries in Central and South America are exporters of beverage crops, fruits and vegetables, and sugar. They tend to be importers of grains, oilseed products, and dairy products. The Caribbean countries are largely service-oriented economies that typically depend on imports to provide most of their food supplies.

Many LAC countries have engaged in macroeconomic reform and trade liberalization over the past 15 years, abandoning a development strategy known as "import substitution and industrialization" (ISI). The earlier strategy attempted to promote domestic industrial development by using policy instruments that included highly protectionist trade barriers. Trade reforms that have been implemented effectively lowered transaction costs and trade barriers, leading to greater trade and economic growth in most of the LAC countries.

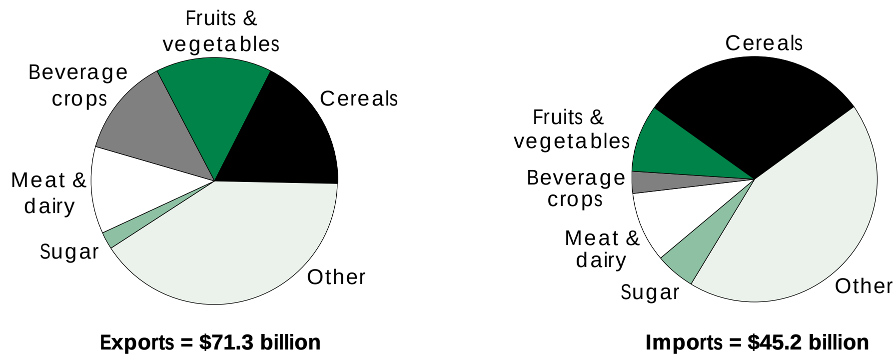
For example, most import quotas were eliminated, while tariffs were dramatically lowered and simplified. The variety of tariff rates for different types of goods also was significantly reduced and simplified. Countries that previously employed multiple exchange rates to ration scarce foreign exchange simplified their regimes with unified exchange rates. Countries that previously supported overvalued exchange rates allowed exchange rates to be determined by market forces, helping eliminate trade deficits and reduce borrowing from foreign countries.

LAC countries have negotiated numerous bilateral and regional trade agreements to promote trade in recent years. These agreements have led to important intraregional trading blocs, notably NAFTA and MERCOSUR, that are now prominent features of the region. Total exports of goods and services within the LAC region (intra-regional trade) have increased from about 15 percent of the region's total exports in 1988 to 21 percent in 1997.

South Asia's share of global exports has remained around 1 percent, unchanged for the last two decades despite high economic growth. Principal exports from this region are textiles, garments, carpets, leather products, and agricultural commodities such as cotton, rice, and tea. In recent years, exports have shifted from food and primary products to manufactured products. The European Union (EU) and the U.S. remain major destinations for South Asia's exports, with East Asia becoming an important market in recent years.

Regional trade within South Asia is limited, less than 4 percent of the region's total trade. India maintains a growing trade

Cereals and Fruits and Vegetables Lead Ag Trade for Developing Countries



Sub-Saharan Africa (excludes Nigeria), Latin America and Caribbean, and South Asia.
1995-97 average.
Economic Research Service, USDA

surplus in the region, with 1995 regional shipments accounting for 5 percent of its total exports. In contrast, India's imports from the region are only one-half percent of its total imports. Regional trade in South Asia is hampered by India's protectionist policies and the longstanding political conflict between India and Pakistan.

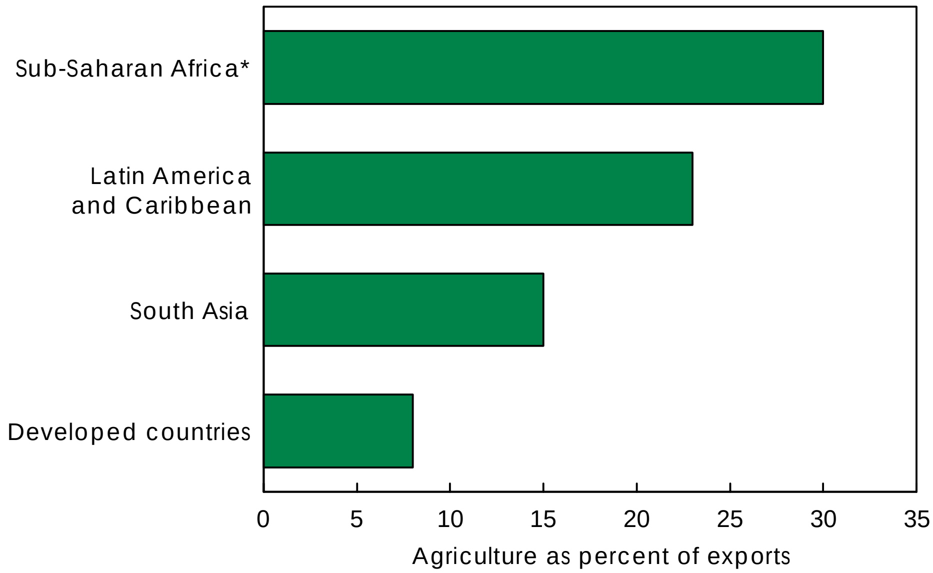
In South Asia, trade barriers for all goods and services are generally high, although they have been lowered significantly since the early 1970's. Tariffs averaged 39 percent during 1994-98, compared with about 6 percent for developed countries. However, tariff rates differ significantly across the region. Nepal, for example, imposes no tariffs on primary products, and its tariffs on most other products range up to 20 percent. Applied tariff rates in India and Pakistan, on the other hand, often exceed 50 percent. Nontariff barriers, designed to manage domestic supply and protect the domestic manufacturing sector, are prevalent in the region, although they have declined by more than 85 percent between the 1980's and 1990's.

South Asia's agricultural policies generally have been driven by goals of self-sufficiency, which led to trade policies such as export restrictions, licensing procedures, monopoly controls, and export taxes. Since the reform policies implemented in the 1990's, export restrictions have been removed from almost all agricultural commodities in Bangladesh, Pakistan, and Sri Lanka, and from a number of agricultural commodities in India. However, government control of exports and licensing requirements continues to inhibit most major agricultural commodity exports in India, and some agricultural exports and imports in Pakistan.

The *Sub-Saharan Africa* region continues to be highly dependent upon European importers, which recently took about 51 percent of the region's exports, down from around 80 percent in the 1960's. Despite efforts to diversify, exports continue to be mostly unprocessed primary commodities, such as coffee, cotton, and ores. In 29 out of 47 Sub-Saharan African countries, as few as three primary commodities provide at least 50 percent of total export revenues. Trade in Sub-Saharan Africa is strongly affected by trade preference arrangements, particularly the Lomé agreement giving goods from African, Caribbean, and Pacific (ACP) countries preferential access to EU markets.

Most Sub-Saharan African countries have liberalized their domestic and international trade markets since the mid-1980's. Many countries have significantly liberalized their exchanges rates, allowing them to adjust to market levels. These changes have yet to increase the region's share of global trade. Sub-Saharan Africa's share of world exports has actually been shrinking, from 3.7 percent in 1960-62 to 1.5 percent in 1994-96, although its exports have grown.

Developing Countries Rely More on Agriculture for Export Earnings Than Developed Countries



1995-97 average.
*Excludes Nigeria.
Economic Research Service, USDA

Nontariff barriers have taken the form of government licenses or other forms of approval of imports. But since the mid-1980's, most countries have reduced the number of products requiring prior approval to import. Several countries in Sub-Saharan Africa, including Madagascar, Kenya, Nigeria, and Zambia, also have begun to promote exports, by reducing export controls, lowering export taxes, reducing the role of marketing boards, and establishing economic processing zones where production occurs in duty-free areas that are close to shipping locations. There also have been efforts to negotiate or re-negotiate trade agreements among countries (such as the Southern African Development Community or SADC), but historically these agreements have not significantly increased trade in the region.

Trade Issues Vary Among Countries

The "three pillars" of URAA concerns are market access, domestic support, and export competition. Market access includes conversion of nontariff barriers into bound tariff levels and reduction of existing tariffs. This has set the stage for future negotiation to finish converting nontariff barriers to tariff barriers, lowering existing tariffs, increasing minimum access levels for tariff-rate quotas, and reducing export taxes.

In the area of government domestic support for agriculture, the URAA rules determined which policies were permitted and which were to be reduced during the implementation period. Trade-distorting domestic support levels are scheduled for reductions based on an "Aggregate Measurement of Support," which measures the monetary value of government support to a sector.

Along with domestic support, continued reductions in all trade distorting subsidies and further clarification of policies and programs that distort trade are key subjects for future negotiation. In the area of export competition, countries agreed to reduce their export subsidy programs and refrain from introducing new subsidy programs.

Most developing countries did not set up a reduction schedule for their domestic support programs, and domestic support or export subsidies may be exempt under SDT accorded to developing countries. Elimination of domestic agricultural supports, while generally a top priority for those developing countries exporting agricultural products, may receive tepid support from food importing countries, especially in Sub-Saharan Africa. Such countries are apprehensive that any reduction of support may result in food shortfalls and increased food prices.

For the poorest countries, foreign exchange availability to finance food imports is closely linked to improved access to developed country markets. Many developing countries have argued that future negotiations on agriculture should focus on improving market access by lowering average tariff levels as well as through reduced tariff escalation, the practice of levying higher tariff rates on value-added products than on basic commodities. Protection of domestic agricultural producers by developed countries limits market access and therefore demand for developing country commodities. This protection reduces prices of agricultural commodities exported by low-income countries, which lowers export revenues and hampers their ability to purchase food imports.

Food security-related trade issues, such as declining food aid budgets and potential rising food prices, are a growing concern for many developing countries. This is particularly true for low-income net food importing countries in Sub-Saharan Africa, South Asia, and Latin America, which have become more dependent upon food imports in recent decades.

Market access is particularly important for countries in South Asia and Africa, where access to textile and apparel markets in developed countries is a top priority. The Uruguay Round's Agreement on Textiles and Clothing phases out the Multifiber Arrangement (MFA), a treaty dating from the 1970's that attempted to limit textile and clothing imports from developing countries. The MFA will be phased out over 10 years, but most of the change is postponed to the final year, 2005. This raises two concerns for exporting developing countries: that the agreement itself precludes any further negotiation on textile issues in the near future, and that it may be politically impossible for importing countries to carry out their Uruguay Round obligations with such a significant proportion of the liberalization deferred to the end of the phase-out period.

Highlights of Commitments from the Uruguay Round Agreement on Agriculture (URAA)

Category/item	Developed countries (DC's)	Developing countries (excluding least developed)	Least developed countries*
Market access			
Tariffication	Convert all nontariff barriers to tariffs	Same as DC's	Same as DC's
	Reduce tariffs by 36 percent overall within 6 years; min. 15 percent per tariff line	Reduce tariffs by 24 percent overall within 10 years; min. 10 percent per tariff line	Exempt from reductions, but must at least bind tariffs
Tariff-rate quotas	Create minimum access of 3 percent of consumption, to increase to 5 percent	Same as DC's	Same as DC's
Special safeguard	Duties allowed on tariff-rate quota commodities if import volume or prices meet certain criteria	Same as DC's	Same as DC's
Export subsidies			
New subsidies	Disallowed	Disallowed	Disallowed
Reductions of old	Reduce 21 percent over 6 years from base	Reduce 14 percent over 10 years from base	Exempt, but no increases
Credits/guarantees	To be negotiated further	Same as DC's	Same as DC's
Domestic support**			
Categorization of exemption/nonexemption	"Amber box," "green box," and "blue box" policies	Same as DC's	Same as DC's
Level of support as indicated by Aggregate Measurement of Support (AMS)	Reduce 20 percent over 6 years	Reduce 13.3 percent over 10 years	Exempt
	"De minimus" provision exempts commodity if less than 5 percent of total value of production	"De minimus" provision exempts commodity if less than 10 percent of total value of production	Not applicable
	Not applicable	Investment, input, and diversification subsidies exempt	Not applicable

*United Nations classification (below $700 per capita annual income).
**For more information on domestic support measures and policies, *see Agriculture in the WTO*, December 1998 (Economic Research Service), and special articles in *Agricultural Outlook*, October 1997 and December 1998.

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Another issue for low-income developing countries is the erosion of favorable effects from trade preference arrangements. For the LAC countries, the recent WTO ruling against the European Union on its preferential arrangement for imported bananas from former colonies illustrates how competition is likely to intensify between high-cost, less efficient producers in developing countries who benefit from preference arrangements and lower-cost producers who do not enjoy such arrangements. Likewise, products from Sub-Saharan Africa, which currently face no tariffs in Europe, will confront stiffer competition as developed countries lower their tariffs under URAA and future WTO agreements to other developing countries (especially East Asian countries).

Nontariff barriers have become an important issue for middle-income developing countries, particularly in Latin America and Asia, unable to export their agricultural products to industrialized countries. These middle-income countries claim that nontariff barriers, such as complicated sanitary and phytosanitary requirements, very high health standards, and procedures that take decades to approve an exporting country’s production system, have essentially blocked their exports from many potential markets. In upcoming negotiations, debate about nontariff barriers will be further complicated by concerns regarding the environment, biotechnology, and unfair labor practices. Given their limited resources, most developing countries have requested technical assistance from developed countries in interpreting and adopting complex technical rules. Most WTO developed country members are willing to provide such assistance.

Improved market access for their agricultural products appears to be a top priority among developing countries. Participation in multilateral trade negotiations presents developing countries with opportunities for better market access for their agricultural products, as well as opportunities to preserve or change global trade regulations that will enhance their participation in the global trading system while allowing them to meet their development goals. Recognizing this, an increasing number of developing countries in the WTO have started to actively participate in multilateral trade negotiations, such as the recent WTO Ministerial in Seattle. **AO**

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Biotechnology: Implications for U.S. Corn & Soybean Trade

The introduction of biotechnology into the U.S. food and fiber system has raised questions about possible effects of the new technology on U.S. agricultural trade and the U.S. agricultural marketing system. Producers of major field crops such as corn and soybeans have rapidly embraced bioengineered varieties because of their ability to enhance yields and reduce pest-management costs. Nevertheless, these farmers have begun to face uncertainty in marketing bioengineered products abroad, in part because of potential limitations from government policies and the direction and intensity of consumer preferences. Consumer preferences regarding biotech products have been cited as a factor in the performance of U.S. exports.

The Biosafety Protocol—an environmental agreement aimed at protecting biodiversity—was adopted by more than 130 countries on January 29, 2000, in Montreal, but must be ratified by 50 countries before it can go into effect. This process could take 2-3 years. The scope of the Protocol does not cover food safety. To a large extent, the Protocol will not alter the status quo for bulk commodities containing a biotech component. Countries may, as many currently do, require approval of new biotech crop varieties under their national laws and regulations.

The European Union (EU) approval process for imports of bioengineered varieties has been a particular source of consternation for U.S. exporters. Although some bioengineered corn varieties have been approved by the EU, a number of other corn varieties approved and planted in the U.S. have yet to be accepted by the EU, and a de facto moratorium currently exists on EU approvals. To date, however, the one biotech soybean variety commercially grown in the U.S. is approved in the EU market.

While only a small fraction of U.S. corn acreage has been planted to these non-EU-approved corn varieties, fears of having shipments delayed or halted if unapproved varieties are commingled with approved varieties has prompted some U.S. corn exporters to forego the EU market altogether. Meanwhile, a number of countries around the world have announced plans to move forward with labeling requirements for bioengineered foods, generating concern that the U.S. might lose export markets or that U.S. food processors will face significant labeling-related costs.

These circumstances suggest the need to take stock of the potential impact of biotech trade restrictions on U.S. commodity exports and markets. An examination of the global markets for corn and soybeans—which are similar but which differ in some significant ways—can highlight factors that may be key to assessing the degree and nature of potential effects. Key factors include the importance of trade as a share of demand for U.S. commodities, trading partners' inclination to buy from the U.S. rather than competing suppliers, flexibility in the U.S. marketing system to respond to "differentiating" demands of importers, and regulatory actions taken by governments.

Most U.S. Corn Remains Stateside

In marketing year 1998/99, the domestic corn market claimed more than 80 percent of total corn use (use equals total supply less stocks). With such a large domestic component—consisting of feed use (61 percent), food use (8 percent), and ethanol and sweeteners (13 percent)—the U.S. corn market should be cushioned significantly from international biotech issues.

The export component of U.S. corn use is 18 percent, with shipments going to countries throughout the world but nearly evenly distributed among four countries or regions: Latin America, Japan, "other East Asia," and Africa and the Middle East. These four markets account for 94 percent of total U.S. corn exports. EU purchases—about 300,000 tons in 1998/99—represent less than 1 percent of U.S. corn exports, a drop from 4 percent prior to biotech-related problems. The EU has remained relatively self-sufficient in corn, indicated by the large volume of trade among member countries (intra-EU trade) relative to imports from nonmembers.

The EU represents the one documented loss of U.S. corn exports resulting from

About the Data

U.S. trade data are calendar year, from *Foreign Agricultural Trade of the U.S. (FATUS),* ERS/USDA. Other countries' calendar year trade data are from the United Nations FAOSTAT and COMTRADE databases. In this article, use equals supply minus stocks.

issues related to biotech products. The volume of corn exports to the EU fell more than 90 percent in 1998, a decline due largely to delay in the EU regulatory approval process. Moreover, this market represented an import quota to compensate trading partners for the loss of market when Spain and Portugal joined the EU. However, this market opportunity has been virtually eliminated by delays in the EU regulatory process.

Patterns in world trade over time depend on a number of factors, including relative proximity, historical trade ties, and degree of price sensitivity in a market. The biotech issue is another factor that may influence world trade flows. Global commodity markets are composed of many bilateral trade flows linking individual country markets. A high degree of price sensitivity means that small price differentials arising between competing suppliers may generate dramatic changes in trade flows. This is illustrated by examining bilateral flows of corn in the pivotal period between 1995, when U.S. corn exports totaled 60 million tons, and 1998, when corn exports had fallen back to 41 million.

Most of the drop in U.S. corn exports from 1995 to 1998 is attributable to a fall in shipments to "other East Asian countries," including China. U.S. corn exports to this region plunged from 20.4 million tons in 1995 to 8.6 million tons in 1998, largely because of increased global supplies and weak demand when China, a net importer in 1995, became a net exporter in 1998. Fierce price competition among competing suppliers to the East Asian market generally plays a major role in import decisions, causing strong shifts in trade relationships.

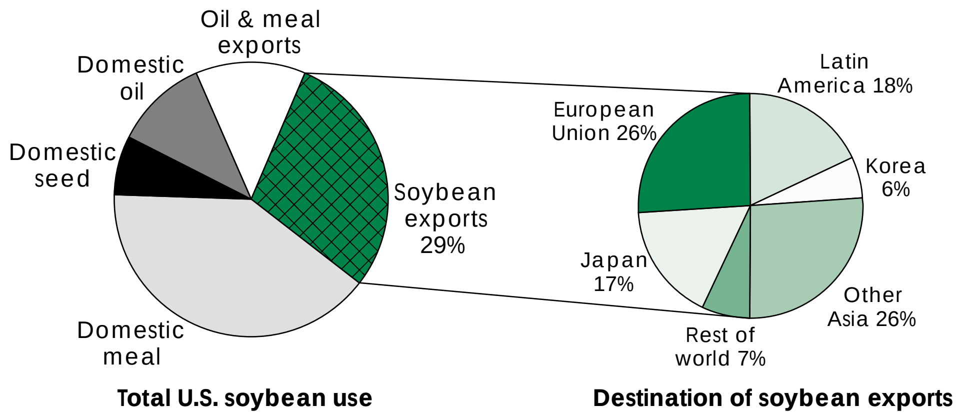
Malaysia, which imported most of its corn from the U.S. in 1995, made a dramatic switch away from U.S. corn in 1998, as China, a long-time supplier, once again became the dominant supplier by offering lower prices. Malaysia substitutes corn from China with relative ease because of its historical bilateral ties with China and its relative proximity.

The Malaysian example typifies the general price sensitivity of trade relationships in East and Southeast Asia. Japan, however, stands apart from other East Asian countries with regard to its importing decisions, because of the strong government role in managing food imports. The U.S. has remained the dominant supplier of corn to Japan, and the U.S. share of Japan's imports has been roughly the same over time despite major disruptions in the corn market, because Japan favors a reliable and stable trade relationship.

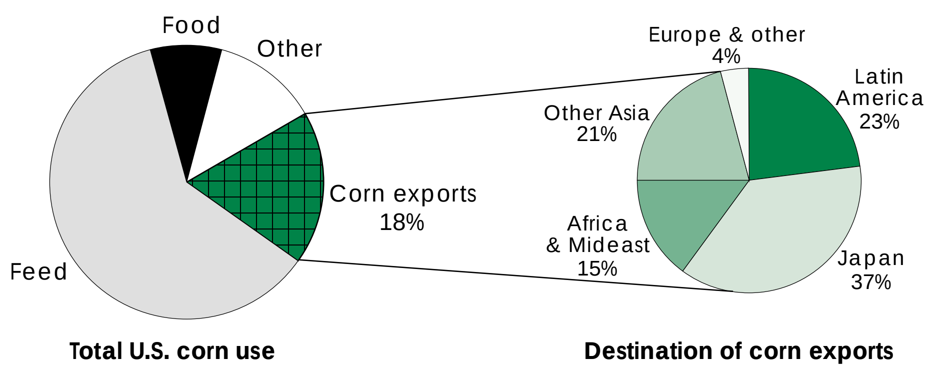
Mexico provides an example of an importer that has consistently relied on the U.S. as its dominant supplier because of market conditions. This strong bilateral tie is explained by geographic location and shipping logistics, as well as the reluctance to incur large transaction costs of switching to nontraditional suppliers—e.g., negotiation of contracts with new suppliers and exposure to risks of an unfamiliar supplier. Mexico's reliance on the U.S. as its sole supplier of corn provides continuity in foreign demand similar to the stable demand from the U.S. domestic market. While total U.S. corn exports fell dramatically from 1995 to 1998, Mexico's imports from the U.S. actually increased 80 percent. Colombia's relatively close proximity to the U.S. also seems to explain its stable trade pattern. More than 60 percent of Colombia's corn imports come from the U.S.

Clearly, U.S. corn suppliers face a diverse foreign market, and competitively priced

One-Fourth of U.S. Soybean Exports Went to the European Union In 1998/99. . .



. . .But Nearly All U.S. Corn Exports Went to Non-European Countries



Use = Supply minus stocks. Fiscal year, October 1, 1998 - September 30, 1999.
Source: 1999 World Agriculture Outlook, Food and Agricultural Policy Research Institute (FAPRI), for use data.

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U.S. Corn Exports to Most Major Purchasers Fell in 1995-98

		Importers							
		Japan	Other E. Asia	EU	Mexico	Colombia	Malaysia	Rest of world	Total exports
Top exporters					*Million tons*				
U.S.	1998	14.2	8.6	0.3	5.2	1.3	0.2	11.3	41.1
	1995	16.0	20.4	3.6	2.9	0.9	1.4	14.9	60.1
Argentina	1998	1.3	1.1	1.5		0.4	0.2	7.8	12.4
	1995	0.1		0.6		0.1	0.5	4.6	6.0
European Union	1998		0.1	8.5			0.1	0.5	9.2
	1995			7.0				0.5	7.5
China	1998	0.2	2.6				1.2	0.7	4.7
	1995								0.1
Hungary	1998	0.3		0.4				1.3	2.1
	1995			0.1				0.5	0.6
South Africa	1998	0.1		0.1				0.7	0.9
	1995	0.2	0.1			0.1	0.3	0.8	1.5
Rest of world	1998	0.1	0.2	0.2		0.4		3.7	4.6
	1995			0.2				2.3	2.5
Total imports	1998	16.2	12.6	11.0	5.2	2.1	2.0	25.9	75.0
	1995	16.3	20.5	11.5	2.9	1.1	2.2	23.5	78.2

Totals may not add due to rounding
Sources: For the U.S., *Foreign Agricultural Trade of the U.S. (FATUS)*, Economic Research Service; for other countries, United Nations FAOSTAT and COMTRADE databases.

Economic Research Service, USDA

corn seems to be a larger consideration for some importers than for others. Direct price competition between the U.S. and China will likely continue to be a key factor in U.S. market share in the East Asian market. But proximity and historical trading ties also play a role.

From a global perspective, with the U.S. supplying about two-thirds of total corn trade, importers cannot easily satisfy such large demand with alternative sources. Furthermore, the U.S. does have to its advantage a long history of being a dominant supplier in a number of countries where purchasers would likely be reluctant to incur the costs associated with switching to nontraditional suppliers unless the U.S. were unable to deliver crops that fit their import needs.

Issues stemming from biotech preferences will be a factor to be considered along with other factors in purchasers' import decisions—price, proximity, and historical trading relationships. But unlike sudden shocks the global corn market has historically experienced (e.g., adverse weather or government policy changes), changes regarding biotech preferences will likely be more gradual, giving producers and grain handlers the opportunity to anticipate and prepare for potential market adjustments (see the following article).

Stiff Competition In Soybean Market

Exports play a larger role in the market for U.S. soybeans than for corn. Shipments to foreign markets amount to about 42 percent of U.S. soybean use—including meal and oil. A symmetry exists in U.S./EU soybean trade—i.e., U.S. soybeans make up a large share of EU soybean imports (39 percent), and EU purchases make up a large share of U.S. soybean exports (33 percent). If soybean exports were to fall suddenly, there would be significant impact on the U.S. soybean market unless the U.S. were able to quickly find alternative buyers. However, efforts to replace U.S.-produced soybeans would impose higher prices on foreign consumers—at least in the short term. Foreign consumers would also face higher prices as suppliers sought to recoup costs associated with developing separate marketing channels for nonbiotech crop varieties.

A dramatic drop in U.S./EU soybean trade is unlikely because of EU reliance on imports from the U.S., and because biotech soybeans commercially grown in the U.S. are EU-approved. However, it is unclear how the EU regulatory regime will evolve, particularly in relation to the potential commercialization and approval of new biotech soybean varieties.

As in the case of corn, the global market for soybeans experienced significant changes in recent years. Between 1997 and 1998, U.S. soybean exports fell from 26 million tons to 20 million, although world trade remained nearly constant. The drop in U.S. exports resulted from price competition that led to expanding foreign sales for every other major soybean exporting country and most importer countries switching some purchases to non-U.S. soybeans. Unlike the corn market, where the decline in demand for U.S. exports was somewhat limited to

While World Soybean Trade Held Fairly Steady in 1998, U.S. Exports Slipped

		Importers							
		EU	Japan	Other E. Asia	Mexico	China	Brazil	Rest of world	Total exports
Top exporters					Million tons				
U.S.	1998	6.8	3.4	2.5	3.1	1.3		3.2	20.3
	1997	9.0	3.7	3.5	2.9	1.7	0.8	4.5	26.1
Brazil	1998	6.6	0.6	1.2	0.1	0.9			9.3
	1997	6.6	1.1					0.6	8.3
Argentina	1998	1.1			0.1	0.4		1.1	2.8
	1997	0.4						0.1	0.5
Paraguay	1998	1.1	0.3	0.6			0.3		2.1
	1997	0.6	0.2				0.8	0.1	1.7
European Union	1998	1.6		0.2				0.1	1.8
	1997	1.0						0.2	1.2
Canada	1998	0.3	0.1					0.4	0.9
	1997	0.3						0.1	0.5
Rest of world	1998		0.2	0.1		0.1	0.1		0.8
	1997		0.3	0.1				0.5	1.0
Total imports	1998	17.5	4.6	4.6	3.4	2.7	0.4	4.9	38.0
	1997	17.9	5.3	3.6	2.9	1.8	1.6	6.1	39.3

Totals may not add due to rounding
Sources: For the U.S., *Foreign Agricultural Trade of the U.S. (FATUS),* Economic Research Service; for other countries, United Nations FAOSTAT and COMTRADE databases.

Economic Research Service, USDA

East Asian countries, the U.S. experienced an across-the-board drop in soybean exports. The U.S. faces direct competition from top soybean exporting countries in nearly all markets, since competitors have established bilateral trade ties in those same markets. The Mexican market, an exception because it has few alternative suppliers, increased its imports of U.S. soybeans.

Traditional competitive forces (primarily prices) appear to be the main driving factors behind the changes in observed bilateral trade patterns for soybeans, and the price-competitive nature of the market has implications for producer decisions to plant bioengineered seed. In order to remain in business, all producers, including those in the U.S., need to remain globally competitive and strive to adopt cost-reducing technologies. Bioengineered seed is such a technology. A possible strategy for some producers is to sell in niche markets willing to pay higher prices for differentiated products, including products not derived from bioengineered crops.

Potential Profit & Cost In Differentiated Products

Among buyers in some countries, demand may co-exist for both biotech crops (grown from bioengineered seed) and nonbiotech crops (grown from seeds developed with traditional plant breeding techniques). The extent to which demand for one or the other will eventually dominate may vary significantly from country to country. Some exporting countries are likely to produce and export both types of crops, and to develop marketing systems that offer consumers products that are differentiated according to their biotech status.

Such product differentiation is merely an extension of a trend already established for high-value products in grain and oilseed markets. Other differentiated products such as high-oil corn, hard endosperm corn, white corn, waxy corn, nutritionally dense corn, high oleic soybeans, and improved food-quality soybeans are already fixtures in the marketplace.

The Japanese soybean market is one example of how U.S. agriculture may tap into opportunities presented by potential demand for nonbiotech commodities, and how new marketing channels emerge to accommodate shifts in demand. In contrast to the EU, a significant amount of soybeans in Japan is consumed by humans. Although Japan continues to import biotech soybeans for use in animal feed, the U.S. has also been successfully exporting both organic and nonbiotech soybeans to the Japanese food-use market at a considerable price premium.

U.S. exports of organic and nonbiotech soybeans suggest that some U.S. producers and companies have pursued profits from potential foreign demand for nonbiotech foods. If there are premiums to be earned for nonbiotech commodities (or for any varieties with other specific traits of value to users), then suppliers of marketing services that help producers meet these specific demands are likely to emerge.

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For example, in 1999, Clarkson Grain and Nisshin Shokai announced a program, called Fresh Pure Green, to assure buyers (principally Japanese soy food manufacturers) that their soybeans are nonbiotech varieties and 99.5-percent free of bioengineered material. The company contracts directly with farmers for specific varieties that are identity-preserved, from planting through harvest, storage, delivery, cleaning, and conditioning. The company relies on an independent certifying agency, the Illinois Crop Improvement Association, to sample and test the soybeans to assure they meet the 99.5-percent standard.

In the long run, consumers around the world will decide what premiums they will pay for nonbiotech products, and producers in different countries will consider the relative prices for biotech and nonbiotech crops in relation to their local farming conditions when deciding what to plant. Both the magnitude of preferences (demand) and the costs of providing different products (supply) will determine the market outcome.

Regulatory actions of governments around the world will also influence the impact of biotech issues on trade. The EU recently adopted labeling regulations for foods containing a biotech ingredient or containing any ingredient with a biotech content of 1 percent or more. Further, to avoid labeling, if the food contains less than 1 percent biotech material, processors must prove that introduction of the biotech content occurred accidentally. However, it is unclear whether enforcing a 1-percent threshold for food is technically feasible, especially where commingling can occur at many locations in the marketing chain. The EU is currently drafting feed labeling regulations.

Japan is also developing food labeling regulations. In August 1999, the Japanese government announced it would institute mandatory labeling of over 20 foods and food ingredients produced from biotech corn and soybeans, to be effective in April 2001. Last fall, well ahead of scheduled government implementation of labeling requirements, a few tofu manufacturers, brewers, and soy sauce and soy protein food manufacturers announced that they will cease using biotech corn or soybeans in their operations. These companies are apparently seeking to cultivate niche markets for nonbiotech foods.

A number of other Asian export markets—South Korea, Thailand, Indonesia, and Hong Kong—as well as Australia and New Zealand, also have decided to follow suit, drafting labeling regulations they expect to implement soon. Canada recently announced that it intends to encourage voluntary labeling.

Full implementation of labeling regulations, while responding to some consumer concerns, could hinder market adjustment by increasing the costs of market segregation and voluntary labeling that may be naturally occurring in response to differentiating demands. Government labeling policies may specify the set of products requiring labeling and determine the tolerance levels for products. If the tolerance level is unduly low or if the standard exceeds the capabilities of currently available technologies—such as diagnostic tests—to reliably differentiate products, mandatory labeling could lead to increased costs.

Potential changes in consumer preferences and the likely evolution of technologies to segregate and verify biotech-free products mean that standards need to change over time. Adapting government regulations to these dynamic market conditions requires widespread public and industry discussion.

Prices Capture Biotech Tradeoffs

Not surprisingly, prices summarize all the impacts of biotechnology on both demand and supply for corn and soybeans. On the demand side, consumers must be willing to pay higher prices for nonbiotech crops in order to cover higher costs of production and marketing. Consumer preferences may create two potential markets and a choice for producers in the future. Producers may face a trade-off between potentially higher prices for nonbiotech crops and lower costs of producing biotech commodities.

Prices play a central role in all types of global market adjustments. In any year, a large number of corn and soybean importing countries switch suppliers readily to obtain the lowest market price, and producers face constant pressures to cut costs in order to remain competitive. The global market impact of a country's preferences regarding biotech products depends on the size of the affected trade flow. EU corn imports represent a small share of global corn trade, but the EU is the world's largest soybean importer. On top of shifts in global markets for biotech crops, consumer willingness to pay for nonbiotech foods also creates a new market that U.S. producers and traders have started to supply. To date, evidence shows that the higher price, nonbiotech market remains small. AO

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For further information on crop biotechnology issues

www.ers.usda.gov/whatsnew/issues/gmo/index.htm
www.aphis.usda.gov/biotechnology/

For more on agricultural implications of the Biosafety Protocol

www.fas.usda.gov/info/factsheets/biosafety.html

Special Article

Biotechnology: U.S. Grain Handlers Look Ahead

Market prospects for genetically-modified crops are tinged with uncertainty. U.S. producers have rapidly increased acreage devoted to production of crops developed through biotechnology (biotech), which has the potential to increase yields and reduce pest management costs. However, some consumers in the U.S. and abroad—particularly the European Union—remain wary of the new technology despite reviews by the U.S. Food and Drug Administration that have determined that biotech foods currently in the market are safe for human consumption. As a result, grain handlers, food manufacturers, and others in the global marketing chain are attempting to balance the issue of divergent consumer demand with producers' desire to capture the cost-saving potential of biotech crops.

Although trade pattern changes arising from shifts in consumers' preferences have been quite modest so far, segregation of grain into biotech and nonbiotech may increasingly become a consideration. Questions are being raised about possible adaptations in the marketing system. What are the likely costs of large-scale segregation? How has the U.S. grain marketing system already responded to changing demands? And, how is the system likely to change in the future?

Consumer Preferences & Market Uncertainty

Adoption of biotech varieties has been rapid in the U.S. Since the mid-1990's, U.S. acreage in insect- corn and cotton, and herbicide-tolerant soybeans, has increased dramatically. By 1999, nearly 60 percent of soybean-harvested acres in the U.S. was planted to herbicide-tolerant soybeans, while nearly 40 percent of corn-harvested acreage and over 60 percent of cotton-harvested acreage was planted to biotech varieties.

Whether U.S. farmers will continue to expand their seeding of biotech crops this spring depends primarily on how they anticipate acceptance of biotech crops in domestic and foreign markets, which rests upon consumers' attitudes toward biotech food and feed products. At present, market demand for nonbiotech corn is very limited, accounting for only 1 percent of 1999 U.S. corn production. This demand stems primarily from 1) European Union (EU) imports, where products containing biotech ingredients must be labeled, 2) a few brewers in Japan that accept only nonbiotech corn as a grain ingredient, 3) domestic seed use, and 4) a handful of domestic food manufacturers that recently decided to use only nonbiotech ingredients.

According to analysis by USDA's Economic Research Service (ERS), market demand for nonbiotech soybeans now accounts for about 2 percent of U.S. soybean production and is associated mainly with 1) domestic seed use, 2) food soybeans exported to Japan (about 200,000 tons a year) under identity preservation (IP) marketing for making tofu, soy sauce, and other soy foods, and 3) a few niche markets in the EU. Most EU imports of soybeans and soybean meal (16 million tons of soybeans and 19

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million tons of soymeal) are used for animal feed, but a small share (less than 1 million tons) is used for food. Despite the relatively small market shares for nonbiotech corn and soybeans, demand for nonbiotech commodities is highly fluid and could expand quickly, depending on whether consumers' preferences for nonbiotech food products expand, as well as consumer preferences regarding the use of biotech crops in industrial uses and in livestock feed.

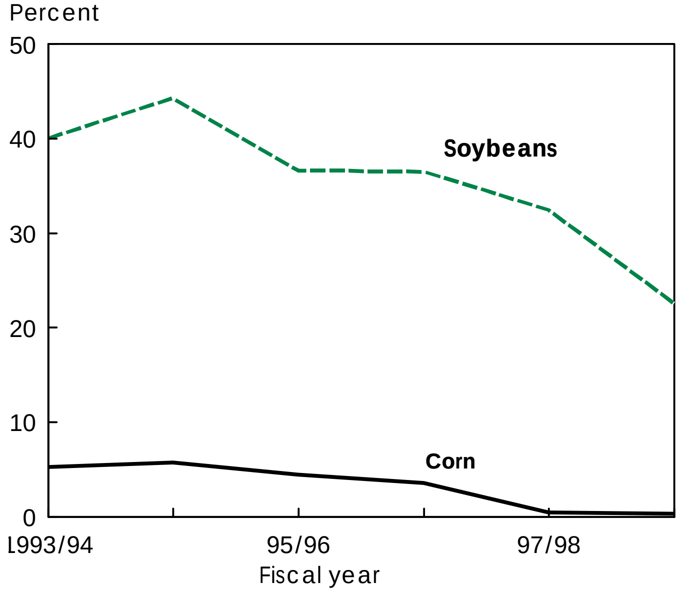
During the last 2 years, U.S. corn exports to the EU dropped about $200 million per year, on average, primarily because of declining exports to Spain and Portugal resulting from a moratorium on EU approval of new corn varieties already being grown in the U.S. The share of U.S. corn exports destined for the EU declined from 4.5 percent in fiscal year (FY) 1995/96 to less than 1 percent in FY1997/98 and FY1998/99. U.S. grain processing companies are concerned not only about corn exports, but more importantly, about exports of processed byproducts, such as corn gluten feed and meal. Export sales of U.S. corn byproducts have outpaced corn sales to the EU for a number of years. For example, the value of corn byproducts exported to the EU totaled $403 million in FY1998/99, far exceeding the $22-million export value for corn.

Some large U.S. grain processors—e.g., A.E. Staley and Archer Daniels Midland (ADM)—announced in April 1999 they would not accept EU-unapproved corn biotech varieties for processing for fear of jeopardizing their byproduct exports to the EU. Last summer, ADM advised producers to segregate biotech crops from nonbiotech crops, but reversed this decision in early February 2000 as weak demand for the higher priced nonbiotech grain became apparent.

Some countries have begun to require that foods containing biotech ingredients be labeled. The EU recently adopted labeling

Special Article

EU Share of U.S. Soybean Exports Dwarfs Corn Share



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regulations for foods and is currently drafting feed labeling regulations. Japan, Korea, Australia, and New Zealand are among other countries proposing mandatory labeling policies for bioengineered foods. Potentially widening interest in food labeling regulation could be an impetus for more farmers and grain handlers to assess their ability to segregate or begin to take steps necessary to segregate.

Over the last year, a few food manufacturers decided to end the use of biotech crops in their operations. In July 1999, the Gerber and Heinz companies announced that their baby food processing facilities would immediately stop using biotech inputs. In January 2000, Bestfoods, Inc., decided to end its use of biotech ingredients in manufactured foods destined for the EU, in order to avoid the biotech labeling requirement, and Frito-Lay Inc. announced that it would cease using biotech corn in its snack food manufacturing.

Strategies to Separate Nonbiotech Grain

Current demand for nonbiotech corn and soybeans is weak, and according to grain trade sources, European consumers appear generally unwilling to pay premiums for bulk shipments of nonbiotech commodities. However, if circumstances were to change and demand for nonbiotech commodities were to strengthen, it would be necessary to form supply chains on a larger scale that keep the nonbiotech product separate from undifferentiated "standard" commodity grain. This could be accomplished by either "crop segregation" or "identity preservation (IP)." These marketing practices to preserve a commodity's unique characteristics are not new, but rather an extension of practices that have heretofore been used to preserve differentiation in markets for value-enhanced commodities such as high-oil corn and STS soybeans (nonbiotech, but herbicide-tolerant).

Identity preservation (IP) is the more stringent (and expensive) of the two methods and requires that strict separation—typically involving containerized shipping—be maintained at all times. IP is often used for marketing commodities like food-grade corn and soybeans. Testing for biotech vs. nonbiotech status typically occurs just prior to containerization. IP lessens the need for additional testing as control of the commodity changes hands, and it lowers liability and risk of biotech/nonbiotech commingling for growers and handlers.

Crop *segregation* requires that crops be kept separate to avoid commingling during loading and unloading, storage, and transportation. This supply chain system thus requires cleaning of equipment such as augers, as well as transportation and storage facilities. Such a handling process has been in place for some time for specialty grains (e.g., high-oil corn). But containerization is generally not involved, and testing to check for the presence of biotech content—which occurs at various points in the marketing system (e.g., country elevator, terminal elevator, and final purchaser)—is more critical.

Because of limited demand for nonbiotech corn and soybeans and the expense of maintaining separate storage facilities, few grain elevators have attempted to segregate and market nonbiotech products. Last September, Sparks Companies conducted a survey of 100 midwestern grain elevators and found that 11 percent were differentiating for nonbiotech corn and 8 percent for nonbiotech soybeans. Of the surveyed elevators, only 1 percent offered premiums for nonbiotech corn and 3 percent offered producer premiums for nonbiotech soybeans. The premiums varied widely, depending on the elevator's location and the intended consumer market for the product. According to other industry sources, common nonbiotech price premiums ranged from $0.05 to $0.10 per bushel for corn and $0.10 to $0.15 per bushel for soybeans. The lower end of the premium range reflects less strict tolerance levels (i.e., more biotech content) and vice versa. In February 2000, the Farm Progress Company's survey of 1,200 U.S. elevators indicated that 24 percent plan to segregate corn and 20 percent plan to segregate soybeans in the fall. Elevators are likely anticipating food labeling regulations in other countries.

Effective segregation or IP—which begins at the farm level—is particularly difficult if a farmer grows both biotech and nonbiotech varieties of a certain crop. Pollen drift is a natural occurrence over which farmers have little control but which can lead to the unintended presence of biotech material in nonbiotech crops. Using buffer zones may help minimize biotech commingling from pollen drift, but it remains a serious problem for effective crop segregation or IP. Pollen drift is a less critical issue for a self-pollinated plant like soybeans than for corn.

Not only must farmers keep biotech and nonbiotech plots separate, but they must also prevent commingling with biotech varieties during harvest, transport, and storage by cleaning all equipment and onfarm storage facilities. Testing methods are sensitive enough to detect very small amounts of biotech material, making it difficult to clean equipment thoroughly enough to meet a very strict standard. A recent straw poll of 400 U.S. farmers conducted by Reuters in January 2000 found that 15 percent of farmers have made or are planning to make the necessary investments to handle or segregate nonbiotech crops in the fall.

Elevators must also develop stricter control over handling procedures in order to maintain segregation. A key problem at the elevator stage is that segregation will likely slow the rate of turnover in a high-volume business. The elevator industry operates with very thin margins—differences between prices paid to sellers and prices received from purchasers—and elevator profits depend on moving large volumes of product quickly. Segregation slows the process because it involves tests to ensure that the grain is truly nonbiotech. In addition, farmers must form multiple queues (for biotech and nonbiotech) to deliver their grain, unless elevators specify days on which they accept only biotech or nonbiotech varieties. Particularly during peak harvest periods, delays can be a serious problem, and the need to segregate aggravates the problem.

Segregation also reduces the volume the elevator can maintain, because with commingling prohibited, some elevator bins will likely remain partially empty. This is referred to as "storing air" and may be a significant expense incurred by elevators when segregating different types of grain. In addition, elevators must clean all their equipment, including augers and bins, to make sure that no commingling occurs beyond the tolerance level. The tolerance level for biotech content in large part determines the degree of difficulty for grain handlers to maintain segregation of nonbiotech commodities—the stricter the tolerance level, the harder for grain handlers to comply.

The elevator's ability to segregate depends in large part on the size of the operation and the type of facilities at each location. There are currently no official estimates regarding the number of elevators that have the ability to segregate. However, the National Grain and Feed Association estimates that, at a 1-percent or lower tolerance level for biotech content, roughly 5 percent of the nation's elevators can achieve segregation without major new investments. At these elevators, two parallel-track supply chains generally already exist, one for handling standard bulk grains and the other for segregated grains.

Elevators that will be able to segregate most effectively have a large number of bins of varying capacity as well as multiple pits (where grain is dropped before being moved to a storage bin). Multiple pits enable the elevator to dedicate pits for either biotech or nonbiotech, reducing the likelihood of commingling. In addition, the size distribution of bins—e.g., a large number of small bins vs. a small number of large bins—affects the number of commodities an elevator is able to segregate. Elevators located on rivers may be able to segregate at lower cost and with less inadvertant commingling than inland terminals because they can often load grain directly onto vessels, with fewer unloadings and loadings.

WINDOW on the PAST

Excerpts from USDA publications

Demand Grows for Advances in Plant Breeding

Probably no question is of so much interest and importance to farmers . . . as the improvement of cultivated plants. . . . Experience . . . the world over has shown clearly that the possibilities in the improvement of our useful plants are almost unlimited. . . . The last half century has witnessed unprecedented extensions of the areas devoted to agriculture, and this has led to a demand, still imperfectly satisfied, for new sorts of cultivated plants adapted to the particular conditions of climate and soil in each new region.

Yearbook of Agriculture, 1897

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Elevators can use a variety of strategies to facilitate segregation. A grain handling firm may commit facilities at certain locations to handling only biotech or nonbiotech grains. Specializing in this way will prevent onsite commingling, ensure that elevator services are provided for nonbiotech crops, and may preclude the need for additional investments. Another strategy would be for a given elevator to accept nonbiotech and biotech crops on different days, enabling the elevator to regularly clean equipment and maintain crop segregation while minimizing elevator queues.

Segregation also poses logistical problems for grain transportation. Currently, grains and oilseeds are commonly transported to export elevators in unit trains of up to 100 cars or by barge. If effectively maintaining crop segregation makes it necessary to shift transportation away from unit trains toward smaller units (e.g., individual rail cars), transportation costs could increase significantly. According to the North American Grain Exporters Association, setting acceptable biotech content levels at about 5 percent or higher would increase costs only modestly. But if biotech-free thresholds were increasingly stringent, costs would rise. One industry source suggests that if the threshold for biotech content were as low as 1 percent (a threshold that would likely require IP), transportation costs could potentially double.

Nonbiotech Marketing Could Mirror Value-Enhanced Grain

The current system of agricultural marketing relies on broad, standardized quality grades to signal value (establish a price scale) through the market, and is based on commingling to achieve a particular quality. As consumers demand agricultural commodities with specific characteristics (such as nonbiotech), buyers and sellers will utilize alternative coordination strategies likely to resemble those for marketing value-enhanced products.

Special Article

Segregating Nonbiotech Crops: What Could It Cost?

Segregation of nonbiotech grains and oilseeds is essentially an extension of the handling process for specialty grains and oilseeds, which has been in place for some time. A University of Illinois study of segregation costs reported by 84 U.S. handlers of specialty grains and oilseeds in the spring of 1998 indicates that separation of specialty corn (high-oil corn or HOC) and specialty soybeans (Synchrony Treated Soybeans or STS—a herbicide-tolerant, but not biotech variety) adds, on average, $0.06 per bushel for HOC and $0.18 per bushel for STS soybeans (excluding purchasing premiums) above the customary costs of handling standard bulk commodities at each of those elevators. Segregation costs include the additional costs of storage, handling, risk management (for example, if quality is not as high as specified in the contract), analysis and testing, and marketing (expenses associated with negotiating contract terms). Minimum oil content specified in the contract generally ranges from 6 to 8 percent (7 percent, on average) for high oil corn. In contrast, quality for specialty soybeans is controlled by specifying in the contract that growers plant only the STS variety developed by DuPont.

In order to develop a scenario analysis, USDA's Economic Research Service (ERS) examined each of the cost items in the Illinois study at three points along the marketing chain—country elevator, subterminal, and export elevator—to determine adjustments or modifications needed to estimate approximate segregation costs for nonbiotech corn and soybeans. Although the costs of segregation vary significantly among the surveyed elevators, results indicate that, across all elevators surveyed, costs for segregating nonbiotech crops could be higher than for specialty crops.

Although the estimated costs are not small, they do not imply that disarray would occur in the grain marketing system if nonbiotech crops were handled on a larger scale. If nonbiotech crops remain a niche market, many elevators may choose to accept bulk grain and not attempt to distinguish between biotech and nonbiotech characteristics. This would be particularly true for those elevators handling the large portion of domestic corn and soybeans destined for feed use.

Not all elevators that choose to distinguish between biotech and nonbiotech would bear the costs identically. Some elevators currently handle niche market crops at relatively low cost, particularly if they are equipped with multiple pits and have bin space configured to facilitate segregation. In addition, specialization across elevators (some handling biotech, others nonbiotech) would also result in much lower added costs to the handling system. Further, adjustments in the grain marketing system would work to lower costs as economies of scale in handling are realized and new testing procedures are developed.

The ERS estimates, which should be taken as rough ballpark figures given the limited data currently available, indicate that, on average across the 84 surveyed elevators, segregation could add about $0.22/bushel (excluding premium to the producer) to marketing costs of nonbiotech corn from country elevator to export elevator. Segregation of nonbiotech soybeans at these elevators could add $0.54/bushel, on average, excluding the nonbiotech producer premium. These estimates reflect costs at these elevators and may not represent costs incurred by any one elevator or other elevators in general. In addition, it is important to note that these cost estimates do not take into account any additional costs that could be associated with segregation at the farm level and shipment expenses beyond export elevators to foreign markets.

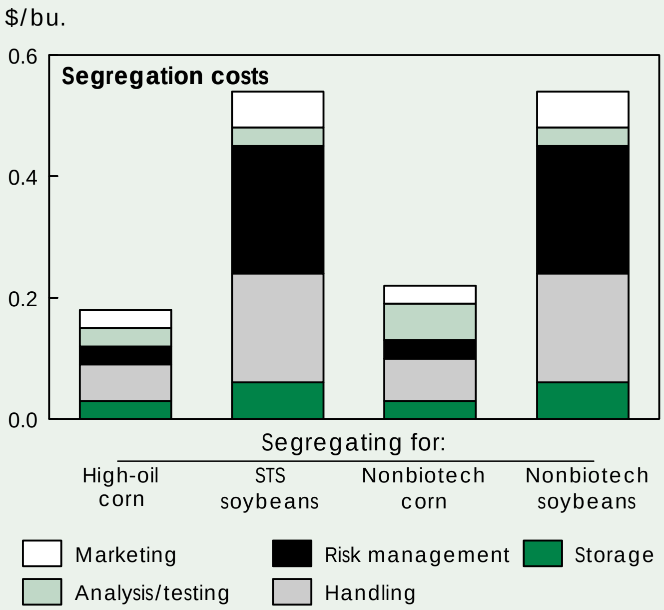
These cost estimates reflect a scenario analysis under the following assumptions: 1) risk management cost is not greater for nonbiotech corn than for HOC (i.e., assuming a high tolerance level for biotech content); 2) two-tier segregation is needed to safeguard against commingling (some elevators have already adopted this practice); and 3) a multiple trait ELISA test kit will be introduced to detect biotech content for Roundup Ready and Liberty Link corn varieties.

In developing this scenario, ERS makes two important adjustments to the Illinois cost estimates. First, the cost estimate for corn at the country elevator is adjusted to reflect a two-tier segregation requirement—to segregate biotech from nonbiotech varieties, and to separate biotech varieties into those approved for shipment to the European Union from EU-unapproved varieties, because most country elevators lack complete knowledge about the destination of corn shipments. For shipments to domestic markets, two-tier segregation might be necessary because some processors (such as Archer Daniels Midland and A.E. Staley) accept only EU-approved corn varieties. Similarly, for shipments to the EU, no commingling with EU-unapproved varieties is permitted. To the extent that producers channel their corn to market outlets that accept EU-unapproved varieties (such as domestic feedlots), handling costs at local elevators could be lower.

Adjusting for two-tier segregation is estimated to increase handling costs for nonbiotech corn at *country elevators* to $0.03/bushel—higher than the $0.02/bushel reported in the Illinois study. Biotech segregation imposed no additional handling cost above the $0.02/bushel incurred at *subterminals* and *export elevators* for segregating specialty corn, because operators know the destination of grain shipments at those facilities. No adjustment was necessary to the cost estimate of handling soybeans, at $0.06/bushel, since biotech soybeans commercially grown in the U.S. are EU-approved.

The adjustment for testing costs reflects the higher cost of testing for biotech content, which is more complicated than testing for physical characteristics such as oil content for high-oil corn. Grains handlers commonly use two testing methods—the DNA-based PCR (polymerase chain reaction) and the protein-based ELISA (enzyme-linked immunosorbent assay). PCR takes 2-10 days at a cost of $200-$450 per test—higher than most country elevators can afford because of the small volume per truck load. In contrast, an on-site ELISA microwell test takes 2 hours and costs up to $10 per

Segregation Adds to Grain Handlers' Costs



Estimated costs of segregation along the marketing chain from country elevator through subterminal and export elevator, for value-enhanced commodities—high-oil corn and STS (herbicide-tolerant) soybeans—and for nonbiotech corn and soybeans. Nonbiotech corn and soybeans contain no (or minimal amounts of) genetically modified material.

Economic Research Service, USDA

test. A faster and simpler ELISA dipstick test to provide a "yes-no" result takes 5-10 minutes and costs just $3.50 per test. At a 99-percent purity level, a typical ELISA test uses a sample of 50-60 kernels out of close to 1,000 bushels in a truck load. A smaller sample size (40-50 kernels) would be used for testing at a 95-percent purity level.

The additional cost of testing for biotech content using ELISA test kits is estimated at $0.01/bushel for one specific new trait (e.g., Bt corn) at *country elevators*. However, since current ELISA testing methods require a separate test for detection of each unique trait, several tests may be required to determine if a truck load of corn is free of biotech material. The ERS analysis assumes four separate ELISA tests for five biotech corn varieties at country elevators—3 Bt varieties, plus Liberty Link and Roundup Ready. While biotech content in the 3 Bt varieties can be detected technically in one test, multiple tests (usually two) are a common practice adopted by local elevators. This increases the cost of analysis and testing for nonbiotech corn to $0.04/bushel from the $0.01/bushel reported in the Illinois study.

At *subterminals* and *export elevators*, PCR testing is more common than ELISA because it is very sensitive and can be used to detect the presence of several gene modifications in one set of tests. However, PCR tests are generally conducted in commercial labs. In addition, it becomes more economical with the larger volume of grains being handled, remaining just $0.01/bushel as estimated by the Illinois study. The cost of testing soybeans is the same as for corn, at $0.01/bushel.

A typical sample size for testing is about 80 pounds of grain in a river subterminal, which handles about 50,000-55,000 bushels of grain in a barge.

Risk management costs for segregating grain into biotech and nonbiotech conceivably could be greater than for handling high-oil corn or STS soybeans, because producers face significantly different risks. For example, a 1-percent lower oil content might reduce price premiums paid to HOC producers. However, 1-percent biotech content in a grain shipment could cause rejection, which has much more serious consequences for grain exporters. Because there is no way to quantify this extra cost, ERS assumes the risk management cost is the same as for HOC in the Illinois study, $0.01 per bushel or $0.03 from country elevator to export elevator.

No adjustment was necessary to ***marketing costs***—$0.03 per bushel for corn and $0.06 per bushel for soybeans—or to ***storage costs***—$0.03 per bushel for corn and $0.06 per bushel for soybeans—as these costs are the same for value-enhanced and nonbiotech commodities across the three elevator points.

In considering segregation costs from production through marketing, ERS excludes purchasing premiums to producers because the gain to producers offsets the loss to the country elevator. However, the common range for purchasing premiums currently offered by a few elevators is $0.05 to $0.10 per bushel for nonbiotech corn and $0.10 to $0.15 per bushel for nonbiotech soybeans, according to industry sources.

Some U.S. grain handlers are already segregating grain for certain export markets. For example, Cargill is segregating nonbiotech corn for Japan, although without guaranteeing a specific tolerance level for biotech material. Patterning corn segregation after handling procedures for HOC can usually meet the nonbiotech requirements of Japanese buyers. To avoid commingling in shipments, grain handlers may also contract with producers to plant only certain corn varieties (e.g., nonbiotech or EU-approved) and require adoption of specific production and harvesting practices.

These cost estimates are meant to indicate general magnitudes and are likely to change as adjustments occur in the marketing system for specialized commodities. For example, segregation costs could be lower if the volume of segregated commodities expands and the grain handling industry realizes economies of size. Handling costs at country elevators could be lower if EU-unapproved corn varieties were channeled by producers only to market outlets that accept them. Development of more cost-effective test kits could also decrease costs. Actual expenses associated with risk management, such as liability and risk of commingling for growers and handlers of nonbiotech commodities, could be different from those for specialty grains. Finally, segregation costs for nonbiotech soybeans could be considerably lower (perhaps dropping from the estimated $0.54/bushel to $0.18/bushel, on average) if handling is patterned after the less stringent HOC procedures instead of STS soybeans.

Special Article

The most successful value-enhanced grain crop to date is Optimum high-oil corn (HOC), developed by Dupont using traditional breeding methods (as opposed to biotechnology) and released in the U.S. in 1992. In 1999, U.S. farmers planted about 1 million acres to HOC. Feed from high-oil corn—with an oil content of 6-8 percent compared with less than 4 percent for commodity corn—provides a significantly higher level of energy than standard corn. The added value from this crop comes from reduced expenditures for fat supplements in the feed ration, improved digestibility, and improved feed efficiency. Since 1998, about 50 percent of the high-oil-corn supply was grown by farmers who fed it directly to their own livestock. The remainder was exported to nations where fat additives are in short supply (for example, Mexico, Japan, and Taiwan).

High-oil corn—along with a wide variety of other value-enhanced feed grains and oilseeds—is marketed through a business of Dupont, Optimum Quality Grain (OQG), which licenses this technology to more than 80 seed dealers. Given that the value of this product differs between domestic and export markets, OQG has developed a two-tiered marketing approach to capture the crop's value.

Domestic farmers who grow HOC to feed their own livestock purchase the seed (generally at a premium) from licensed technology providers. For HOC exports, OQG contracts with growers and pays a premium for the HOC crop. These contracts involve few management restrictions, but do require the grower to purchase the seed from a licensed dealer who usually charges the grower a technology fee. For the 2000 corn contract, OQG is offering a $0.15-per-bushel premium for HOC at the 7-percent level, and higher as oil content increases. The crop is examined using near-infrared transmittance technology at all elevator transfer points to determine the oil content of the commodity.

The logistics of the export marketing system are managed by OQG and strategic partners—ADM, ConAgra, and Consolidated Grain and Barge. A farmer seeking a contract to grow HOC (or any other value-enhanced variety that OQG deals in) can identify interested local elevators through the internet. Optimum Quality Grain ensures that high-oil corn is segregated throughout the supply chain through a network of contracts that coordinates movement of the crop—from farm to elevator to barge to ocean freight to consumers who pay a premium for the product.

Other strategies are used to market products with selected characteristics. For example, Japanese consumers have very strict and specific quality requirements for food-grade soybeans. Japanese firms hire brokers who contract with U.S. farmers to produce exactly the type of soybean they require and pay premiums for those characteristics. Specific tolerance levels are indicated in the sales contract, as is often a provision for quality testing. However, testing methods currently available in the marketplace may not be totally reliable for detecting biotech material.

The market for nonbiotech commodities is not yet well understood. Lack of information about the magnitude of premiums that consumers may be willing to pay for nonbiotech crops make near-term decisions difficult for elevators and farmers.

April Releases—USDA's Agricultural Statistics Board

The following reports are issued electronically at 3 p.m. (ET) unless otherwise indicated.

April

3	*Dairy Products*
	Crop Progress (4 pm)
4	*Weather - Crop Summary*
	Pest Management Practices
5	*Broiler Hatchery*
	Egg Products
	Poultry Slaughter
7	*Dairy Products Prices (8:30 am)*
	Vegetables
10	*Crop Progress (4 pm)*
11	*Crop Production (8:30 am)*
	Weather - Crop Summary
12	*Broiler Hatchery*
13	*Potato Stocks*
	Turkey Hatchery
14	*Dairy Products Prices (8:30 am)*
	Cattle on Feed
17	*Milk Production*
	Crop Progress (4 pm)
18	*Weather - Crop Summary*
	Hatchery Production - Ann.
19	*Broiler Hatchery*
20	*Catfish Processing*
	Cold Storage
	Dairy Products Prices
	Livestock Slaughter
24	*Chickens & Eggs*
	Crop Progress (4 pm)
	NASS Facts Newsletter (4 pm)
25	*Weather - Crop Summary*
	Dairy Products - Ann.
	Floriculture Crops
	Milk - PDI
26	*Ag Chemical Usage - Livestock*
	Broiler Hatchery
27	*Meat Animals - PDI*
28	*Dairy Products Prices (8:30 am)*
	Agricultural Prices
	Peanut Stocks & Processing
	Poultry - Prod. & Value

Compounding the difficulty is uncertainty about the effectiveness of product quality monitoring and about tests to accurately determine whether a crop meets yet-to-be-determined tolerance standards for biotech content. These problems suggest that nonbiotech crops will be marketed in ways that differ from standard commodities, and that at least in the near term they will be sold as niche market products using many of the same marketing techniques currently used for value-enhanced products. AO

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Statistical Indicators

Summary Data

Table 1—Key Statistical Indicators of the Food & Fiber Sector

				1999				2000		
	1998	1999 F	2000 F	I	II	III	IV F	I F	II F	III F
Prices received by farmers (1990-92=100)	101	--	--	96	97	96	--	--	--	--
Livestock & products	97	--	--	95	93	96	--	--	--	--
Crops	106	--	--	98	102	96	--	--	--	--
Prices paid by farmers (1990-92=100)										
Production items	110	--	--	115	114	112	--	--	--	--
Commodities and services, interest, taxes, and wage rates (PPITW)	114	--	--	115	115	115	--	--	--	--
Cash receipts ($ bil.)[1]	197	192	190	47	42	47	57	45	42	--
Livestock	95	97	97	24	23	25	25	23	23	--
Crops	102	95	93	23	19	21	32	22	19	--
Market basket (1982-84=100)										
Retail cost	163	167	--	167	167	167	169	--	--	--
Farm value	103	98	--	101	97	98	97	--	--	--
Spread	195	205	--	203	204	204	207	--	--	--
Farm value/retail cost (%)	22	21	--	21	21	21	20	--	--	--
Retail prices (1982-84=100)										
All food	161	164	168	164	164	164	165	167	168	168
At home	161	164	168	164	164	164	165	167	168	168
Away from home	161	165	169	164	165	166	167	168	168	169
Agricultural exports ($ bil.)[2]	53.6	49.0	49.0	11.8	11.3	11.6	13.6	12.8	11.5	--
Agricultural imports ($ bil.)[2]	37.0	37.4	38.0	9.6	9.9	8.8	8.9	9.4	9.5	--
Commercial production										
Red meat (mil. lb.)	45,134	46,134	45,251	11,387	11,367	11,624	11,756	11,616	11,328	11,377
Poultry (mil. lb.)	33,667	35,570	37,005	8,637	9,072	8,986	8,875	8,960	9,395	9,315
Eggs (mil. doz.)	6,658	6,912	7,060	1,693	1,706	1,728	1,786	1,745	1,740	1,760
Milk (bil. lb.)	157.3	162.7	166.0	40.5	42.0	39.8	40.4	42.0	43.0	40.5
Consumption, per capita										
Red meat and poultry (lb.)	213.5	221.3	221.2	54.1	55.0	55.6	56.6	55.0	55.5	55.3
Corn beginning stocks (mil. bu.)[3]	883.2	1,307.8	1,787.0	1,307.8	8,051.9	5,698.4	3,616.2	1,787.0	8,019.9	--
Corn use (mil. bu.)[3]	8,791.0	9,298.3	9,500.0	3,018.6	2,359.2	2,089.4	1,831.1	3,208.0	--	--
Prices[4]										
Choice steers--Neb. Direct ($/cwt)	61.48	65.56	67-71	62.43	65.04	65.12	69.65	68-69	67-71	66-72
Barrows and gilts--IA, So. MN ($/cwt)	34.72	34.03	39-41	28.83	35.18	35.70	36.29	40-41	40-42	40-44
Broilers--12-city (cents/lb.)	63.10	58.10	55-58	58.10	58.60	58.10	57.60	54-55	56-58	56-60
Eggs--NY gr. A large (cents/doz.)	75.80	65.60	59-63	75.00	58.10	66.20	63.00	62-64	54-56	58-62
Milk--all at plant ($/cwt)	15.42	14.38	12.30-12.90	15.97	12.87	14.83	13.83	11.70-11.90	11.40-11.90	12.30-13.10
Wheat--KC HRW ordinary ($/bu.)	3.27	2.92	--	3.16	2.92	2.82	2.83	--	--	--
Corn--Chicago ($/bu.)	2.41	2.01	--	2.16	2.13	1.83	1.91	--	--	--
Soybeans--Chicago ($/bu.)	6.01	4.61	--	4.95	4.58	4.40	4.53	--	--	--
Cotton--avg. spot 41-34 (cents/lb)	67.02	52.31	--	56.61	55.43	49.11	48.08	--	--	--

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Farm real estate values[5]										
Nominal ($ per acre)	683	703	713	740	798	844	887	926	974	992
Real (1982 $)	528	521	507	514	540	558	572	586	604	609
U.S. civilian employment (mil.)[6]	125.8	126.3	128.1	129.2	131.1	132.3	133.9	136.3	137.7	--
Food and fiber (mil.)	23.9	23.5	23.1	23.6	24.3	24.7	24.5	24.6	24.8	--
Farm sector (mil.)	2.0	2.0	1.9	1.8	1.9	2.0	2.0	1.9	1.8	--
U.S. gross domestic product ($ bil.)	5,803.2	5,986.2	6,318.9	6,642.3	7,054.3	7,400.5	7,813.2	8,300.8	8,759.9	--
Food and fiber--net value added ($ bil.)	900.2	881.8	924.8	971.4	1,077.1	1,140.8	1,216.5	1,323.3	1,367.2	--
Farm sector--net value added ($ bil.)[7]	76.0	71.1	75.5	73.1	78.3	75.3	86.7	84.5	74.3	--

F = Forecast. -- = Not available. 1. Quarterly data for 1999 are forecast. 2. Annual data based on Oct.-Sept. fiscal years ending with year indicated. 3. Sept.-Nov. first quarter; Dec.-Feb. second quarter; Mar.-May third quarter; Jun.-Aug. fourth quarter; Sept.-Aug. annual. Use includes exports and domestic disappearance. 4. Simple averages, Jan.-Dec. 5. As of January 1. 6. Civilian labor force taken from "Monthly Labor Review," Table 18--Annual Data: Employment Status of the Population, Bureau of Labor Statistics, U.S. Department of Labor. 7. The value-added data presented here is consistent with accounting conventions of the National Income and Product Accounts, U.S. Department of Commerce.

U.S. & Foreign Economic Data

Table 2—U.S. Gross Domestic Product & Related Data

				1998			1999			
	1997	1998	1999	II	III	IV	I	II	III	IV
	Billions of current dollars (quarterly data seasonally adjusted at annual rates)									
Gross Domestic Product	8,300.8	8,759.9	9,248.4	8,683.7	8,797.9	8,947.6	9,072.7	9,146.2	9,297.8	9,501.6
Gross National Product	8,305.0	8,750.0	--	8,683.7	8,772.2	8,930.5	9,058.2	9,131.9	9,282.3	--
Personal consumption expenditures	5,524.4	5,848.6	6,254.9	5,816.2	5,889.6	5,973.7	6,090.8	6,200.8	6,303.7	6,434.2
Durable goods	642.9	698.2	758.1	693.9	696.9	722.8	739.0	751.6	761.8	782.0
Nondurable goods	1,641.7	1,708.9	1,841.1	1,701.2	1,716.6	1,742.9	1,787.8	1,824.8	1,853.9	1,904.3
Food	817.0	853.4	903.0	847.6	857.6	875.6	885.4	893.4	903.9	933.9
Clothing and shoes	271.2	286.3	306.2	287.1	286.6	289.2	301.8	306.7	308.1	308.5
Services	3,239.8	3,441.5	3,655.7	3,421.1	3,476.1	3,508.0	3,564.0	3,624.3	3,688.0	3,747.9
Gross private domestic investment	1,383.7	1,531.2	1,621.6	1,495.0	1,535.3	1,580.3	1,594.3	1,585.4	1,635.0	1,676.9
Fixed investment	1,315.4	1,460.0	1,577.4	1,454.2	1,461.7	1,508.9	1,543.3	1,567.8	1,594.2	1,605.8
Change in private inventories	68.3	71.2	44.3	40.8	73.7	71.4	51.0	17.6	40.8	71.1
Net exports of goods and services	-88.3	-149.6	-256.8	-153.9	-165.7	-161.2	-201.6	-245.8	-278.2	-296.4
Government consumption expenditures and gross investment	1,481.0	1,529.7	1,628.7	1,526.5	1,538.7	1,554.8	1,589.1	1,605.9	1,637.2	1,687.0
	Billions of 1996 dollars (quarterly data seasonally adjusted at annual rates) [1]									
Gross Domestic Product	8,165.1	8,516.3	8,861.0	8,457.2	8,536.0	8,659.2	8,737.9	8,778.6	8,900.6	9,050.9
Gross National Product	8,168.8	8,506.0	--	8,456.6	8,510.6	8,641.9	8,723.3	8,764.3	8,885.5	--
Personal consumption expenditures	5,433.7	5,698.6	5,998.7	5,675.6	5,730.7	5,795.8	5,888.4	5,961.8	6,033.3	6,120.3
Durable goods	657.4	731.5	815.1	723.9	731.2	766.0	788.8	806.1	821.2	846.6
Nondurable goods	1,619.9	1,685.3	1,774.6	1,681.9	1,692.0	1,712.6	1,749.5	1,763.7	1,779.3	1,810.6
Food	799.1	820.6	850.8	818.2	823.0	835.4	839.5	844.6	850.0	873.2
Clothing and shoes	271.1	292.2	317.8	293.1	292.2	295.6	314.7	316.8	321.6	318.0
Services	3,156.7	3,284.5	3,416.8	3,272.2	3,309.6	3,322.0	3,356.5	3,399.2	3,440.6	3,473.0
Gross private domestic investment	1,385.8	1,547.4	1,636.2	1,513.1	1,551.1	1,593.9	1,608.2	1,599.8	1,651.6	1,691.5
Fixed investment	1,316.0	1,471.8	1,589.4	1,466.7	1,474.0	1,522.5	1,555.9	1,581.0	1,607.3	1,615.8
Change in private inventories	69.1	74.3	41.9	43.1	76.1	70.7	50.1	14.0	38.0	68.7
Net exports of goods and services	-109.8	-215.1	-324.5	-218.4	-237.9	-232.3	-284.5	-319.0	-338.2	-349.7
Government consumption expenditures and gross investment	1,455.1	1,480.3	1,534.6	1,480.7	1,485.3	1,495.9	1,514.6	1,519.5	1,536.5	1,570.8
GDP implicit price deflator (% change)	1.7	1.2	1.5	1.3	1.5	1.0	2.0	1.4	1.1	2.0
Disposable personal income ($ bil.)	5,982.8	6,286.2	6,639.2	6,238.3	6,325.3	6,417.8	6,505.4	6,593.2	6,671.0	6,786.5
Disposable pers. income (1992 $ bil.)	5,884.7	6,125.1	6,367.2	6,087.5	6,154.6	6,226.6	6,289.3	6,339.1	6,384.8	6,455.4
Per capita disposable pers. income ($)	22,320	23,231	24,304	23,086	23,345	23,628	23,904	24,171	24,389	24,750
Per capita disp. pers. income (1992 $)	21,954	22,636	23,309	22,528	22,715	22,924	23,110	23,239	23,343	23,542
U.S. resident population plus Armed Forces overseas (mil.) [2]	268.0	270.6	273.1	270.1	270.8	271.5	272.0	272.7	273.4	274.1
Civilian population (mil.) [2]	266.5	269.1	271.7	268.6	269.3	270.1	270.6	271.2	271.9	272.6

	Annual			1999						2000
	1997	1998	1999	Jan	Aug	Sep	Oct	Nov	Dec	Jan
	Monthly data seasonally adjusted									
Total industrial production (1992=100)	130.1	136.4	142.2	138.6	142.5	142.9	144.2	144.9	145.2	146.6
Leading economic indicators (1992=100)	103.9	105.5	105.3	104.5	105.5	105.5	105.5	105.8	106.1	106.4
Civilian employment (mil. persons) [3]	129.6	131.5	133.5	133.2	133.5	133.7	133.9	134.1	134.4	135.2
Civilian unemployment rate (%) [3]	4.9	4.5	4.2	4.3	4.2	4.2	4.1	4.1	4.1	4.0
Personal income ($ bil. annual rate)	6,951.1	7,358.9	7,791.0	7,599.0	7,840.0	7,848.1	7,941.4	7,973.2	7,994.2	8,052.8
Money stock-M2 (daily avg.) ($ bil.) [4]	4,040.8	4,397.0	4,661.2	4,422.4	4,572.9	4,594.1	4,612.1	4,632.2	4,661.2	4,684.3
Three-month Treasury bill rate (%)	5.07	4.81	4.66	4.34	4.76	4.73	4.88	5.07	5.23	5.34
AAA corporate bond yield (Moody's) (%)	7.26	6.53	7.04	6.24	7.40	7.39	7.55	7.36	7.55	7.78
Total housing starts (1,000) [5]	1,474.0	1,616.9	1,664.8	1,804	1,657	1,628	1,636	1,663	1,748	1,775
Business inventory/sales ratio [6]	1.38	1.39	1.35	1.38	1.33	1.33	1.33	1.33	1.32	--
Sales of all retail stores ($ bil.) [7]	2,546.3	2,696.5	--	239.1	252.8	252.8	253.5	256.9	261.8	262.8
Nondurable goods stores ($ bil.)	1,505.4	1,563.8	--	139.0	146.0	147.0	147.7	148.5	151.8	150.7
Food stores ($bil.)	432.1	443.0	--	37.4	38.5	38.7	38.9	39.3	40.6	38.8
Apparel and accessory stores ($ bil.)	116.8	124.2	--	11.1	11.4	11.3	11.3	11.2	11.2	11.3
Eating and drinking places ($ bil.)	244.1	247.1	--	23.0	23.7	24.0	24.5	24.7	24.8	25.1

-- = Not available. 1. In October 1999, 1996 dollars replaced 1992 dollars. 2. Population estimates based on 1990 census. 3. Data beginning January 1994 are not directly comparable with data for earlier periods because of a major redesign of the household survey questionnaire. 4. Annual data as of December of year listed. 5. Private, including farm. 6. Manufacturing and trade. 7. Annual total. *Information contact: David Johnson (202) 694-5324*

Table 3—World Economic Growth

	Calendar year									
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
	Real GDP, annual percent change									
World	2.1	1.5	3.1	2.7	3.5	3.2	1.8	2.5	3.3	3.1
less U.S.	1.7	1.2	2.8	2.8	3.5	2.7	1.0	2.0	2.9	3.2
Developed economies	1.7	0.8	2.8	2.2	3.1	2.9	2.0	2.6	3.2	2.6
less U.S.	1.0	0.1	2.2	2.0	2.8	2.2	0.9	1.8	2.6	2.6
United States	3.3	2.4	4.0	2.7	3.7	4.5	4.3	4.1	4.4	2.6
Canada	0.9	2.3	4.7	2.8	1.7	4.0	3.1	4.2	4.1	2.4
Japan	1.0	0.3	0.7	1.4	5.2	1.6	-2.5	0.7	1.7	2.5
Australia	2.4	3.8	5.2	3.8	4.4	4.1	4.8	4.3	3.9	3.3
European Union	1.1	-0.1	2.7	2.3	1.5	2.5	2.6	2.1	3.1	2.8
Transition economies	-6.9	-8.6	-1.7	-0.7	-1.0	1.4	-1.4	0.5	3.0	3.0
Eastern Europe	-2.7	1.1	4.0	5.8	3.9	3.3	2.2	2.0	5.0	4.5
Poland	2.6	3.8	5.2	7.0	6.1	6.9	4.8	3.6	6.3	5.3
Former Soviet Union	-13.4	-10.0	-14.9	-5.9	-4.6	0.1	-4.0	-0.6	1.4	1.8
Russia	-14.5	-8.7	-12.6	-4.1	-3.5	0.8	-4.5	0.0	1.7	1.5
Developing economies	5.4	5.9	5.2	5.2	5.7	4.2	2.2	3.0	4.6	5.3
Asia	7.7	8.0	8.8	8.3	7.4	6.0	0.4	6.0	6.5	6.4
East Asia	9.4	9.2	9.7	8.8	7.7	7.0	2.3	7.3	6.9	7.0
China	14.2	13.5	12.6	10.5	9.6	8.8	7.8	7.1	7.7	8.6
Taiwan	7.5	7.0	6.5	6.4	6.1	6.7	4.8	5.7	5.7	5.0
Korea	5.4	5.5	8.2	8.9	6.7	5.0	-5.8	10.2	7.0	5.5
Southeast Asia	5.6	7.7	7.9	8.1	7.1	4.8	-6.2	3.2	6.2	5.5
Indonesia	7.2	7.3	7.5	8.2	7.8	4.9	-13.3	0.0	8.9	6.5
Malaysia	7.8	8.3	9.2	9.5	8.6	7.8	-7.4	4.5	6.1	6.4
Philippines	0.3	2.1	4.4	4.7	5.8	5.2	-0.5	3.0	3.2	4.4
Thailand	8.1	8.4	8.9	8.8	5.5	-0.4	-10.4	4.1	6.1	6.5
South Asia	5.7	4.5	7.1	6.9	6.8	4.5	4.8	5.5	5.2	5.6
India	5.4	5.0	8.1	7.4	7.4	5.2	5.0	6.1	5.4	5.9
Pakistan	7.8	1.9	3.9	5.1	4.7	-0.4	3.7	3.0	4.0	4.5
Latin America	4.8	5.2	2.9	2.0	4.7	5.2	2.7	-0.5	2.8	4.0
Mexico	3.6	2.0	4.5	-6.2	5.1	6.8	4.8	3.7	4.2	4.1
Caribbean/Central	16.0	10.5	-12.1	8.3	11.4	4.9	3.4	-1.0	2.2	4.0
South America	2.9	4.9	6.1	2.7	3.2	4.9	2.1	-1.4	2.6	4.0
Argentina	9.6	5.7	8.0	-4.0	4.8	8.6	4.0	-3.4	2.6	4.6
Brazil	-0.5	4.9	5.9	4.2	2.8	3.2	0.1	0.3	2.8	4.3
Colombia	3.9	5.4	5.8	5.8	2.0	3.1	9.9	-3.2	2.0	2.1
Venezuela	6.1	0.3	-2.3	3.7	-0.5	5.1	-0.7	-7.1	1.6	1.9
Middle East	1.1	1.1	-1.3	2.0	1.9	-9.7	11.4	-0.7	0.3	4.2
Israel	5.6	5.6	6.9	7.0	4.6	2.2	1.9	2.3	2.6	3.5
Saudi Arabia	2.8	-0.6	0.5	0.5	1.4	1.9	1.4	-1.5	1.6	3.0
Turkey	6.4	8.7	-5.2	7.8	7.0	7.5	2.8	-4.4	5.2	9.4
Africa	1.1	2.7	2.5	4.9	3.3	2.5	3.2	2.9	4.5	4.0
North Africa	2.0	0.5	3.9	1.5	6.5	2.6	5.4	4.4	5.5	4.4
Egypt	4.4	2.9	3.9	4.7	5.0	5.5	5.4	6.0	5.4	4.5
Sub-Sahara	0.6	3.9	1.8	6.7	1.7	2.5	2.0	2.1	3.9	3.8
South Africa	-2.2	1.3	2.7	3.4	3.2	1.7	0.6	1.1	3.3	3.5
	Consumer Prices, annual percent change									
Developed Economies	3.5	3.1	2.6	2.6	2.4	2.1	1.5	1.4	1.8	--
Eastern Europe	277.2	356.5	152.6	74.6	32.0	36.7	17.8	--	--	--
Developing Economies	32.8	47.3	51.8	22.1	14.6	9.2	10.3	6.7	5.8	--
Asia	7.6	10.7	15.9	12.8	8.2	4.8	8.0	3.1	3.5	--
Latin America	110.8	209.0	208.9	35.9	22.4	13.2	10.6	9.8	7.6	--
Middle East	25.1	25.3	31.4	35.6	24.2	23.1	23.6	18.3	13.1	--
Africa	32.5	30.6	37.3	33.2	25.9	11.1	8.7	9.0	6.9	--

-- = Not available. The last 3 years are either estimates or forecasts. Sources: Oxford Economic Forecasting; International Financial Statistics, IMF.
Information contact: Andy Jerardo (202) 694-5323

Farm Prices

Table 4—Indexes of Prices Received & Paid by Farmers, U.S. Average

	Annual			1999					2000	
	1997	1998	1999	Feb	Sep	Oct	Nov	Dec	Jan	Feb
					1990-92=100					
Prices received										
All farm products	107	101	95	96	97	91	93	92	90	92
All crops	116	106	96	98	95	88	89	90	87	89
Food grains	128	103	91	101	88	87	89	85	85	87
Feed grains and hay	117	100	86	91	81	76	77	81	84	87
Cotton	112	107	85	92	76	76	74	71	71	72
Tobacco	104	104	103	113	101	104	105	109	110	110
Oil-bearing crops	131	107	83	88	83	80	82	82	82	85
Fruit and nuts, all	109	111	115	96	131	131	119	91	78	84
Commercial vegetables	122	119	110	115	104	96	97	116	97	82
Potatoes and dry beans	90	99	100	96	90	85	94	94	98	98
Livestock and products	98	97	95	94	98	96	98	95	94	94
Meat animals	92	79	83	77	84	87	87	88	90	91
Dairy products	102	119	110	119	121	115	109	93	92	90
Poultry and eggs	113	117	110	109	110	102	114	110	104	104
Prices paid										
Commodities and services, interest, taxes, and wage rates (PPITW)	118	115	115	115	116	117	117	118	118	119
Production items	119	113	112	111	112	113	113	115	115	115
Feed	125	110	101	103	98	99	99	101	102	103
Livestock and poultry	94	88	95	94	94	101	105	110	111	109
Seeds	119	122	121	123	121	121	121	121	121	121
Fertilizer	121	112	105	106	104	105	104	105	107	109
Agricultural chemicals	121	122	122	120	124	124	123	123	121	119
Fuels	106	84	97	66	116	113	119	124	125	132
Supplies and repairs	118	119	121	120	121	121	122	122	122	122
Autos and trucks	119	119	119	119	118	119	120	120	119	119
Farm machinery	128	132	134	134	132	132	133	133	133	133
Building material	118	118	120	119	120	120	120	120	121	122
Farm services	116	115	115	114	116	116	115	115	115	115
Rent	136	120	117	117	117	117	117	117	117	117
Interest payable per acre on farm real estate debt	105	104	105	105	105	105	105	105	108	108
Taxes payable per acre on farm real estate	115	119	120	120	120	120	120	120	123	123
Wage rates (seasonally adjusted)	123	129	135	137	131	135	135	135	140	140
Prod. items, interest, taxes & wage rates (PITW)	118	114	114	113	114	115	115	116	117	117
Ratio, prices received to prices paid (%)*	91	88	82	83	84	78	79	78	76	77
Prices received (1910-14=100)	679	643	607	610	613	578	591	585	572	583
Prices paid, etc. (parity index) (1910-14=100)	1,574	1,532	1,537	1,525	1,541	1,553	1,558	1,566	1,577	1,580
Parity ratio (1910-14=100) (%)*	43	42	39	40	40	37	38	37	36	37

-- = Not available. Values for the two most recent months are revised or preliminary. *Ratio of index of prices received for all farm products to index of prices paid for commodities and services, interest, taxes, and wage rates. Ratio uses the most recent prices paid index. Data for this table are taken from the publication *Agricultural Prices*, which is produced monthly by USDA's National Agricultural Statistics Service (NASS) and is available at http://usda.mannlib.cornell.edu/reports/nassr/price/pap-bb/. For historical data or for categories not listed here, call the National Agricultural Statistics Service (NASS) Information Hotline at 1-800-727-9540, or access the NASS Home Page at http://www.usda.gov/nass.

Table 5—Prices Received by Farmers, U.S. Average

	Annual[1]			1999					2000	
	1996	1997	1998	Feb	Sep	Oct	Nov	Dec	Jan	Feb
Crops										
All wheat ($/bu.)	4.30	3.38	2.70	2.73	2.57	2.58	2.66	2.52	2.50	2.58
Rice, rough ($/cwt)	9.96	9.70	8.50	9.02	6.88	6.23	6.11	6.19	6.03	6.09
Corn ($/bu.)	2.71	2.43	1.95	2.05	1.75	1.69	1.70	1.82	1.90	1.96
Sorghum ($/cwt)	4.17	3.95	3.10	3.09	2.82	2.51	2.58	2.65	2.86	3.06
All hay, baled ($/ton)	95.80	100.00	87.00	79.90	74.50	73.70	74.00	71.10	71.80	72.60
Soybeans ($/bu.)	7.35	6.47	5.35	4.80	4.57	4.47	4.45	4.44	4.62	4.75
Cotton, upland (¢/lb.)	69.30	65.20	64.20	55.60	46.20	45.90	44.70	43.00	43.10	43.40
Potatoes ($/cwt)	4.93	5.62	5.24	5.75	5.15	4.84	5.51	5.58	5.91	5.88
Lettuce ($/cwt)[2]	14.70	17.60	15.20	15.40	13.00	13.00	10.50	16.10	14.60	8.53
Tomatoes, fresh ($/cwt)[2]	28.10	31.70	35.00	35.20	26.90	21.40	26.60	31.40	22.50	24.60
Onions ($/cwt)	10.50	12.60	13.80	13.80	12.30	8.92	8.30	7.88	6.79	5.84
Beans, dry edible ($/cwt)	23.50	19.30	19.80	18.30	18.10	17.20	17.30	17.00	16.70	15.80
Apples for fresh use (¢/lb.)	20.80	22.10	17.10	15.00	23.20	23.50	23.30	23.70	23.50	21.10
Pears for fresh use ($/ton)	376.00	276.00	291.00	362.00	388.00	441.00	461.00	414.00	414.00	386.00
Oranges, all uses ($/box)[3]	4.79	4.22	4.29	5.71	7.98	10.25	4.33	3.41	3.27	3.51
Grapefruit, all uses ($/box)[3]	2.30	1.91	1.41	2.28	8.18	6.80	5.21	3.71	2.40	3.64
Livestock										
Cattle, all beef ($/cwt)	58.70	63.10	59.60	60.60	63.90	66.20	66.20	66.60	67.80	67.50
Calves ($/cwt)	58.40	78.90	78.80	86.90	90.90	91.90	93.00	98.60	102.00	105.00
Hogs, all ($/cwt)	51.90	52.90	34.40	27.70	33.70	34.00	33.40	35.60	36.80	39.60
Lambs ($/cwt)	88.20	90.30	72.30	67.20	75.30	72.60	76.30	77.60	70.90	--
All milk, sold to plants ($/cwt)	14.75	13.36	15.41	15.50	15.80	15.00	14.30	12.20	12.00	11.80
Milk, manuf. grade ($/cwt)	13.43	12.17	14.33	12.30	15.20	12.60	11.00	10.70	10.70	10.50
Broilers, live (¢/lb.)	38.10	37.70	39.30	36.60	36.50	33.50	37.40	36.80	35.00	33.50
Eggs, all (¢/doz.)[4]	74.90	70.30	65.50	65.20	56.70	50.10	64.30	61.30	58.00	68.60
Turkeys (¢/lb.)	43.30	39.90	38.00	35.70	44.50	45.40	45.60	42.20	36.40	35.70

-- = Not available. Values for the two most recent months are revised or preliminary. 1. Season-average price by crop year for crops. Calendar year average of monthly prices for livestock. 2. Excludes Hawaii. 3. Equivalent on-tree returns. 4. Average of all eggs sold by producers including hatching eggs and eggs sold at retail. Data for this table are taken from the publication *Agricultural Prices,* which is produced monthly by USDA's National Agricultural Statistics Service (NASS) and is available at http://usda.mannlib.cornell.edu/reports/nassr/price/pap-bb/. For historical data or for categories not listed here, call the National Agricultural Statistics Service (NASS) Information Hotline at 1-800-727-9540, or access the NASS Home Page at http://www.usda.gov/nass.

Producer & Consumer Prices

Table 6—Consumer Price Indexes for All Urban Consumers, U.S. Average (not seasonally adjusted)

	Annual			1999					2000	
	1997	1998	1999	Feb	Sep	Oct	Nov	Dec	Jan	Feb
	1982-84=100									
Consumer Price Index, all items	160.5	163.0	166.6	164.5	167.9	168.2	168.3	168.3	168.7	169.7
CPI, all items less food	161.1	163.6	167.0	164.7	168.5	168.8	168.8	168.8	169.2	170.3
All food	157.3	160.7	164.1	163.3	164.6	165.1	165.2	165.4	166.1	166.3
Food away from home	157.0	161.1	165.1	163.8	165.8	166.2	166.5	166.8	167.2	167.6
Food at home	158.1	161.1	164.2	163.8	164.5	165.1	165.1	165.4	166.3	166.3
Meats[1]	144.4	141.6	142.3	140.6	143.9	144.4	145.3	145.3	144.7	146.4
Beef and veal	136.8	136.5	139.2	137.3	140.3	141.6	142.2	143.1	143.2	144.3
Pork	155.9	148.5	145.9	143.5	149.7	148.1	149.3	148.6	147.8	150.7
Poultry	156.6	157.1	157.9	157.4	159.8	158.1	159.4	157.5	159.9	157.9
Fish and seafood	177.1	181.7	185.3	184.3	184.7	187.3	187.9	186.9	186.0	190.0
Eggs	140.0	135.4	128.1	138.2	128.2	119.8	128.8	124.0	133.9	131.7
Dairy and related products[2]	145.5	150.8	159.6	162.3	158.7	164.1	164.6	162.1	160.4	160.9
Fats and oils[3]	141.7	146.9	148.3	150.9	148.5	149.0	145.3	145.1	147.0	145.6
Fresh fruits	236.3	246.5	266.3	257.8	265.8	262.3	260.5	266.9	266.6	263.0
Fresh vegetables	194.6	215.8	209.3	209.8	208.0	208.9	209.1	214.0	223.0	211.0
Potatoes	174.2	185.2	193.1	184.0	204.6	194.8	186.1	190.7	196.6	198.1
Cereals and bakery products	177.6	181.1	185.0	183.8	185.2	185.2	184.8	185.9	185.6	186.0
Sugar and sweets	147.8	150.2	152.3	151.3	153.5	153.3	152.1	152.3	154.8	154.4
Nonalcoholic beverages[4]	133.4	133.0	134.3	134.5	134.2	134.6	133.9	134.7	137.1	138.4
Apparel										
Footwear	127.6	128.0	125.7	124.8	124.7	126.1	126.4	123.7	121.6	122.1
Tobacco and smoking products	243.7	274.8	355.8	348.7	373.8	373.3	369.8	369.1	375.1	383.0
Alcoholic beverages	162.8	165.7	169.7	168.6	170.7	170.5	171.2	171.8	172.4	173.0

1. Beef, veal, lamb, pork, and processed meat. 2. Included butter through Decembar '97. 3. Includes butter as of January 98. 4. Includes fruit juices as of January 1998. This table is compiled with data provided by the Bureau of Labor Statistics (BLS). BLS operates a website at http://stats.bls.gov/blshome.html and a Consumer Prices Information Hotline at (202) 606-7828.

Table 7—Producer Price Indexes, U.S. Average (not seasonally adjusted)

	Annual			1999					2000	
	1996	1997	1998	Feb	Sep	Oct	Nov	Dec	Jan	Feb
					1982=100					
All commodities	127.7	127.6	124.4	122.3	128.0	127.7	128.4	128.0	128.3	129.8
Finished goods[1]	131.3	131.8	130.6	130.8	134.7	135.1	135.0	135.0	134.7	136.0
All foods[2]	132.5	132.8	132.4	131.6	134.0	133.1	132.3	131.9	131.2	131.8
Consumer foods	133.6	134.5	134.3	134.1	136.7	135.8	135.4	135.7	135.0	135.9
Fresh fruits and melons	100.8	99.4	90.0	108.0	106.3	108.0	93.0	93.6	91.7	98.1
Fresh and dry vegetables	135.0	123.1	139.5	95.2	120.4	109.3	108.8	143.9	115.3	107.6
Dried and dehydrated fruits	124.2	124.9	124.4	122.6	119.7	119.5	119.3	135.0	123.3	122.4
Canned fruits and juices	137.5	137.6	134.4	136.7	138.1	137.8	137.9	138.8	140.3	140.2
Frozen fruits, juices and ades	123.9	117.2	116.1	124.6	120.4	123.6	126.2	127.1	124.0	124.3
Fresh veg. except potatoes	120.9	121.3	137.9	93.1	117.5	101.6	100.9	151.6	111.3	100.5
Canned vegetables and juices	121.2	120.1	121.5	120.6	120.7	120.7	121.6	121.4	121.4	121.2
Frozen vegetables	125.4	125.8	125.4	126.6	126.0	126.4	126.1	125.3	125.5	127.2
Potatoes	133.9	106.1	122.5	124.8	116.4	108.8	110.8	107.7	109.0	111.0
Eggs for fresh use (1991=100)	105.1	97.1	90.1	83.5	75.7	61.5	85.8	74.7	81.1	95.3
Bakery products	169.8	173.9	175.8	177.5	178.0	178.7	178.8	179.4	179.5	180.2
Meats	109.0	111.6	101.4	98.6	109.2	108.7	105.8	108.8	109.8	111.2
Beef and veal	100.2	102.8	99.5	99.3	110.2	112.1	108.5	109.5	111.1	110.1
Pork	120.9	123.1	96.6	88.3	104.7	100.0	95.8	104.2	103.9	110.3
Processed poultry	119.8	117.4	120.7	113.6	115.1	112.6	115.1	114.5	111.9	108.9
Unprocessed and packaged fish	165.9	178.1	183.0	186.9	193.6	196.6	197.7	190.5	194.9	207.3
Dairy products	130.4	128.1	138.1	144.0	142.9	143.5	142.5	132.7	130.9	130.1
Processed fruits and vegetables	127.6	126.4	125.8	128.1	127.8	128.1	128.5	129.6	129.0	129.5
Shortening and cooking oil	138.5	137.8	143.4	--	--	--	--	--	--	--
Soft drinks	134.0	133.2	134.8	137.0	138.7	139.2	139.3	139.3	139.6	143.0
Finished consumer goods less foods	127.6	128.2	126.4	126.6	133.5	133.7	133.9	133.7	133.3	135.4
Alcoholic beverages	132.8	135.1	135.2	137.2	136.8	136.9	137.8	136.4	136.6	140.1
Apparel	125.1	125.7	126.6	127.2	127.0	126.9	126.5	127.0	126.9	127.0
Footwear	141.6	143.7	144.7	144.6	144.6	144.7	144.7	144.9	145.0	145.1
Tobacco products	237.4	248.9	283.4	363.9	394.6	394.6	394.8	395.3	378.5	399.6
Intermediate materials[3]	125.8	125.6	123.0	120.4	125.3	125.0	125.4	125.6	125.9	126.8
Materials for food manufacturing	125.3	123.2	123.1	122.2	122.0	122.2	121.4	118.5	117.9	117.8
Flour	136.8	118.7	109.2	105.2	103.8	102.2	103.9	99.2	101.8	102.6
Refined sugar[4]	123.7	123.6	119.8	120.1	121.4	120.6	120.2	118.0	116.5	115.0
Crude vegetable oils	118.1	116.6	131.1	107.7	84.6	81.1	81.4	79.3	76.1	76.0
Crude materials[5]	113.8	111.1	96.7	88.2	107.3	104.0	108.6	103.9	106.3	111.2
Foodstuffs and feedstuffs	121.5	112.2	103.8	98.2	100.1	98.8	99.5	96.8	96.4	97.6
Fruits and vegetables and nuts[6]	122.5	115.5	117.2	111.5	120.5	116.2	104.8	118.8	106.8	107.3
Grains	151.1	111.2	93.4	86.4	75.9	72.7	77.3	74.0	77.8	82.4
Slaughter livestock	95.2	96.3	82.3	81.0	86.7	90.9	89.6	91.9	91.6	92.4
Slaughter poultry, live	140.5	131.0	141.4	126.4	132.6	122.7	137.7	130.7	122.2	113.4
Plant and animal fibers	129.4	117.0	110.4	90.8	80.0	80.8	79.4	77.3	83.9	88.1
Fluid milk	107.9	97.5	112.6	113.4	117.4	109.8	104.5	90.6	89.5	88.8
Oilseeds	139.4	140.8	114.4	93.0	90.0	88.1	87.4	87.4	90.0	94.4
Leaf tobacco	89.4	--	104.6	112.6	102.9	106.4	104.1	112.0	111.7	112.9
Raw cane sugar	118.6	116.8	117.2	118.5	109.9	107.5	99.8	97.0	96.8	92.7

-- = Not available. 1. Commodities ready for sale to ultimate consumer. 2. Includes all raw, intermediate, and processed foods (excludes soft drinks, alcoholic beverages, and manufactured animal feeds). 3. Commodities requiring further processing to become finished goods. 4. All types and sizes of refined sugar. 5. Products entering market for the first time that have not been manufactured at that point. 6. Fresh and dried.

This table is compiled with data provided by the Bureau of Labor Statistics (BLS). BLS operates a website at http://stats.bls.gov/blshome.html and a Producer Prices Information Hotline at (202) 606-7705.

Farm-Retail Price Spreads

Table 8—Farm-Retail Price Spreads

	Annual			1998	1999					
	1996	1997	1998	Dec	Jul	Aug	Sep	Oct	Nov	Dec
Market basket[1]										
Retail cost (1982-84=100)	155.9	159.7	163.1	165.6	166.6	167.1	167.7	168.3	168.4	168.7
Farm value (1982-84=100)	111.1	106.2	103.3	101.4	96.9	98.7	99.2	97.1	99.2	95.2
Farm-retail spread (1982-84=100)	180.1	188.6	195.4	200.2	204.1	203.9	204.6	206.7	205.7	208.3
Farm value-retail cost (%)	24.9	23.3	22.2	21.5	20.4	20.7	20.7	20.2	20.6	19.8
Meat products										
Retail cost (1982-84=100)	140.1	144.4	141.6	140.2	142.2	142.8	143.9	144.4	145.3	145.3
Farm value (1982-84=100)	100.4	101.2	84.8	70.7	82.9	83.8	84.7	85.1	85.4	85.7
Farm-retail spread (1982-84=100)	180.9	188.6	200.0	211.5	203.1	203.3	204.6	205.3	206.7	206.5
Farm value-retail cost (%)	36.3	35.5	30.3	25.5	29.5	29.7	29.8	29.8	29.8	29.9
Dairy products										
Retail cost (1982-84=100)	142.1	145.5	150.8	157.6	155.7	156.5	158.7	164.1	164.6	162.1
Farm value (1982-84=100)	107.2	98.0	113.0	127.1	99.2	107.4	112.3	115.5	112.9	92.8
Farm-retail spread (1982-84=100)	174.3	189.3	185.6	185.7	207.8	201.8	201.4	208.9	212.2	226.0
Farm value-retail cost (%)	36.2	32.3	36.0	38.7	30.6	32.5	34.0	33.8	32.9	27.5
Poultry										
Retail cost (1982-84=100)	152.4	156.6	157.1	159.3	157.3	158.5	159.8	158.1	159.4	157.5
Farm value (1982-84=100)	126.2	120.6	126.1	125.6	123.5	119.0	120.5	112.8	123.4	120.2
Farm-retail spread (1982-84=100)	182.6	198.1	192.9	198.1	196.2	204.0	205.1	210.3	200.8	200.5
Farm value-retail cost (%)	44.3	41.2	42.9	42.2	42.0	40.2	40.3	38.2	41.4	40.8
Eggs										
Retail cost (1982-84=100)	142.1	140.0	137.1	142.9	119.5	130.8	128.2	119.8	128.8	124.0
Farm value (1982-84=100)	114.7	99.3	89.6	108.1	68.6	72.2	68.2	55.2	84.2	74.4
Farm-retail spread (1982-84=100)	191.4	213.0	222.5	205.4	211.0	236.1	235.9	235.9	208.9	213.0
Farm value-retail cost (%)	51.9	45.6	42.0	48.6	36.9	35.5	34.2	29.6	42.0	38.6
Cereal and bakery products										
Retail cost (1982-84=100)	174.0	177.6	181.1	182.3	186.3	184.9	185.2	185.2	184.8	185.9
Farm value (1982-84=100)	125.6	107.7	94.4	95.0	78.2	81.8	80.6	77.1	77.7	75.1
Farm-retail spread (1982-84=100)	180.7	187.4	193.2	194.5	201.4	199.3	199.8	200.3	199.7	201.4
Farm value-retail cost (%)	7.2	7.4	6.4	6.4	5.1	5.4	5.3	5.1	5.1	4.9
Fresh fruit										
Retail cost (1982-84=100)	243.0	245.1	258.2	283.5	292.7	294.2	294.5	290.7	287.8	294.8
Farm value (1982-84=100)	151.7	137.0	141.3	138.5	145.5	157.1	158.4	148.0	146.9	144.2
Farm-retail spread (1982-84=100)	285.2	295.0	312.2	350.4	360.7	357.5	357.3	356.6	352.8	364.3
Farm value-retail cost (%)	19.7	17.7	17.3	15.4	15.7	16.9	17.0	16.1	16.1	15.5
Fresh vegetables										
Retail cost (1982-84=100)	189.2	194.6	215.8	212.3	206.0	204.8	208.0	208.9	209.1	214.0
Farm value (1982-84=100)	113.3	118.7	124.5	120.6	122.4	113.5	102.5	88.9	104.4	121.1
Farm-retail spread (1982-84=100)	228.3	233.6	262.7	259.4	249.0	251.7	262.3	270.6	262.9	261.8
Farm value-retail cost (%)	20.3	20.7	19.6	19.3	20.2	18.8	16.7	14.5	17.0	19.2
Processed fruits and vegetables										
Retail cost (1982-84=100)	144.4	147.9	150.6	150.4	156.4	156.5	154.9	156.3	154.7	154.7
Farm value (1982-84=100)	121.5	115.9	115.1	116.0	114.5	114.5	113.6	112.6	111.2	111.7
Farm-retail spread (1982-84=100)	151.6	157.9	161.7	161.1	169.5	169.6	167.8	169.9	168.3	168.1
Farm value-retail cost (%)	20.0	18.6	18.2	18.3	17.4	17.4	17.4	17.1	17.1	17.2
Fats and oils										
Retail cost (1982-84=100)	140.5	141.7	146.9	151.9	148.1	148.6	148.5	149.0	145.3	145.1
Farm value (1982-84=100)	112.3	109.4	118.9	111.5	81.2	80.8	83.0	82.1	79.4	78.2
Farm-retail spread (1982-84=100)	150.9	153.6	157.2	166.8	172.7	173.5	172.6	173.6	169.5	169.7
Farm value-retail cost (%)	21.5	20.8	21.8	19.7	13.7	14.6	15.0	14.8	14.7	14.5

See footnotes at end of table, next page.

Table 8—Farm-Retail Price Spreads (continued)

	Annual			1999					2000	
	1997	1998	1999	Feb	Sep	Oct	Nov	Dec	Jan	Feb
Beef, all fresh retail value (cents/lb.)	253.8	253.3	260.5	258.0	258.1	260.5	269.7	263.5	265.5	265.7
Beef, Choice										
Retail value (cents/lb.)[2]	279.5	277.1	287.8	278	289.4	295.4	300	301.8	294.7	293.6
Wholesale value (cents/lb.)[3]	158.2	153.8	171.6	153.7	177.3	183.1	180.5	181.8	177.5	174.5
Net farm value (cents/lb.)[4]	137.2	130.8	141.1	132.8	140.9	148.5	149.7	147.9	146	146.5
Farm-retail spread (cents/lb.)	142.3	146.3	146.7	145.2	148.5	146.9	150.3	153.9	148.7	147.1
Wholesale-retail (cents/lb.)[5]	121.3	123.3	116.2	124.3	112.1	112.3	119.5	120	117.2	119.1
Farm-wholesale (cents/lb.)[6]	21.0	23.0	30.5	20.9	36.4	34.6	30.8	33.9	31.5	28.0
Farm value-retail value (%)	49	47	49.0	47.8	48.7	50.3	49.9	49.0	49.5	49.9
Pork										
Retail value (cents/lb.)[2]	245.0	242.7	241.5	236.9	248.1	244.7	244.7	246.1	245.7	251.0
Wholesale value (cents/lb.)[3]	123.1	97.3	99	91	105.0	99.5	97.7	103.6	104.6	110.1
Net farm value (cents/lb.)[4]	95.3	61.2	60.4	52.6	63.7	63.2	62.4	66.8	68.0	74.1
Farm-retail spread (cents/lb.)	149.7	181.5	181.1	184.3	184.4	181.5	182.3	179.3	177.7	176.9
Wholesale-retail (cents/lb.)[5]	121.9	145.4	142.5	145.9	143.1	145.2	147	142.5	141.1	140.9
Farm-wholesale (cents/lb.)[6]	27.8	36.1	38.6	38.4	41.3	36.3	35.3	36.8	36.6	36.0
Farm value-retail value (%)	39	25	25.0	22.2	25.7	25.8	25.5	27.1	27.7	29.5

1. Retail costs are based on CPI-U of retail prices for domestically produced farm foods, published monthly by the Bureau of Labor Statistics (BLS). Farm value is the payment for the quantity of farm equivalent to the retail unit, less allowance for by-product. Farm values are based on prices at first point of sale, and may include marketing charges such as grading and packing for some commodities. The farm-retail spread, the difference between the retail value and farm value, represents charges for assembling, processing, transporting and distributing. 2. Weighted-average value of retail cuts from pork and Choice yield grade 3 beef. Prices from BLS. 3. Value of wholesale (boxed beef) and wholesale cuts (pork) equivalent to 1 lb. of retail cuts adjusted for transportation costs and by-product values. 4. Market value to producer for live animal equivalent to 1 lb. of retail cuts, minus value of by-products. 5. Charges for retailing and other marketing services such as wholesaling and in-city transportation. 6. Charges for livestock marketing, processing, and transportation. *Information contact: Veronica Jones (202) 694-5387, William F. Hahn (202) 694-5175*

Table 9—Price Indexes of Food Marketing Costs

	Annual			1998				1999		
	1996	1997	1998	I	II	III	IV	I	II	III
					*1987=100**					
Labor—hourly earnings										
and benefits	459.7	474.3	490.4	484.9	488.3	493.0	494.6	497.8	502.5	503.4
Processing	474.7	486.0	499.3	493.8	497.7	500.7	504.9	504.6	513.0	513.7
Wholesaling	516.0	536.2	552.5	546.8	552.5	555.4	555.1	556.9	562.3	566.4
Retailing	419.9	435.2	454.1	448.7	450.6	457.8	459.4	464.9	465.6	465.3
Packaging and containers	399.8	390.3	395.5	398.5	396.7	394.9	391.9	390.3	396.4	403.0
Paperboard boxes and containers	363.8	341.9	365.2	365.4	368.7	366.8	359.8	355.7	368.3	380.2
Metal cans	498.3	491.0	487.9	494.1	484.7	486.0	486.6	486.6	486.6	486.6
Paper bags and related products	437.8	441.9	432.9	438.8	434.0	430.2	428.5	425.6	435.7	446.3
Plastic films and bottles	326.5	326.6	322.8	326.7	325.0	321.0	318.5	319.7	321.4	325.9
Glass containers	460.5	447.4	446.8	446.9	446.9	446.1	447.3	447.8	447.8	447.0
Metal foil	235.7	233.4	232.0	231.8	232.6	232.6	230.9	228.2	226.1	226.7
Transportation services	429.8	430.0	428.3	429.9	431.8	426.3	425.0	403.9	393.7	394.2
Advertising	580.1	609.4	624.5	623.2	624.2	624.5	626.2	634.1	635.3	636.9
Fuel and power	670.7	668.5	619.7	625.1	622.9	629.2	601.6	586.6	627.3	681.1
Electric	501.3	499.2	492.1	482.2	489.3	511.8	485.0	479.0	484.0	505.9
Petroleum	666.8	616.7	457.0	495.5	470.0	439.2	423.3	388.4	504.0	613.2
Natural gas	1,136.7	1,214.0	1,239.4	1,229.4	1,242.1	1,268.5	1,217.7	1,206.3	1,222.8	1,272.7
Communications, water and sewage	296.8	302.8	307.6	305.5	308.0	308.5	308.5	309.3	308.5	308.9
Rent	268.2	265.6	260.5	262.5	260.4	260.4	258.8	257.5	257.5	256.2
Maintenance and repair	499.6	514.9	529.3	524.1	527.1	531.1	535.1	537.9	540.7	542.5
Business services	501.7	512.3	522.9	518.4	521.2	521.8	530.3	527.7	528.7	533.3
Supplies	338.3	337.8	332.3	335.6	332.4	331.4	329.5	326.6	326.4	326.7
Property taxes and insurance	564.3	580.1	598.3	591.1	595.4	600.7	606.1	609.6	615.2	622.8
Interest, short-term	103.9	108.9	103.7	106.5	106.7	105.6	96.0	93.2	96.7	109.7
Total marketing cost index	452.1	459.9	467.2	465.3	466.9	468.6	468.0	466.5	470.9	475.6

Last two quarters preliminary. * Indexes measure changes in employee earnings and benefits and in prices of supplies used in processing, wholesaling, and retailing U.S. farm foods purchased for at-home consumption. *Information contact: Veronica Jones (202) 694-5387*

Livestock & Products

Table 10—U.S. Meat Supply & Use

	Beg. stocks	Production[1]	Imports	Total supply	Exports	Ending stocks	Consumption Total	Consumption Per capita[2]	Conversion factor[3]	Primary market price[4]
	Million lbs.[5]							Lbs.		$/cwt
Beef										
1996	519	25,525	2,073	28,117	1,877	377	25,863	68	0.700	65.06
1997	377	25,490	2,343	28,210	2,136	465	25,609	67	0.700	66.32
1998	465	25,760	2,642	28,867	2,171	393	26,303	68	0.700	61.48
1999	393	26,493	2,874	29,760	2,329	411	27,020	69	0.700	66
2000	411	26,281	3,015	29,707	2,325	365	27,017	68	0.700	67-71
Pork										
1996	396	17,117	618	18,131	970	366	16,795	49	0.776	56.53
1997	366	17,274	633	18,273	1,044	408	16,821	49	0.776	54.30
1998	408	19,011	704	20,123	1,229	586	18,308	53	0.776	34.72
1999	586	19,308	827	20,721	1,168	488	19,065	54	0.776	34
2000	488	18,680	875	20,043	1,200	500	18,343	52	0.776	39-41
Veal[6]										
1996	7	378	0	385	0	7	378	1	0.83	59
1997	7	334	0	341	0	8	333	1	0.83	82
1998	8	262	0	270	0	5	265	1	0.83	82
1999	5	235	0	240	0	5	235	1	0.83	90
2000	5	224	0	229	0	4	225	1	0.83	99
Lamb and mutton										
1996	8	268	73	349	6	9	334	1	0.89	85
1997	9	260	83	352	5	14	333	1	0.89	88
1998	14	251	112	377	6	12	359	1	0.89	74
1999	12	248	113	373	5	9	359	1	0.89	76
2000	9	215	114	338	6	10	322	1	0.89	77
Total red meat										
1996	930	43,288	2,764	46,982	2,853	759	43,370	120	--	--
1997	759	43,358	3,059	47,176	3,185	895	43,096	118	--	--
1998	895	45,284	3,458	49,637	3,406	996	45,235	123	--	--
1999	996	46,284	3,814	51,094	3,502	913	46,679	125	--	--
2000	913	45,400	4,004	50,317	3,531	879	45,907	122	--	--
										¢/lb
Broilers										
1996	560	26,124	4	26,688	4,420	641	21,626	70	0.859	61
1997	641	27,041	5	27,687	4,664	607	22,416	72	0.859	59
1998	607	27,612	5	28,225	4,673	711	22,841	73	0.859	63
1999	711	29,450	4	30,165	4,741	796	24,628	78	0.859	58
2000	796	30,808	4	31,608	4,825	890	25,893	81	0.869	57
Mature chickens										
1996	7	491	0	498	265	6	228	1	1.0	--
1997	6	510	0	516	384	7	125	1	1.0	--
1998	7	525	0	533	426	6	101	1	1.0	--
1999	6	554	0	562	393	8	162	1	1.0	--
2000	8	556	0	564	415	5	144	1	1.0	--
Turkeys										
1996	271	5,401	1	5,673	438	328	4,906	19	1.0	66
1997	328	5,412	1	5,741	606	415	4,720	18	1.0	65
1998	415	5,215	0	5,630	446	304	4,880	18	1.0	62
1999	304	5,228	1	5,533	379	254	4,900	18	1.0	69
2000	254	5,282	0	5,536	390	250	4,896	18	1.0	68
Total poultry										
1996	839	32,015	5	32,859	5,123	975	26,760	90	--	--
1997	975	32,964	6	33,944	5,654	1,029	27,261	90	--	--
1998	1,029	33,352	6	34,387	5,545	1,022	27,821	91	--	--
1999	1,022	35,232	7	36,261	5,513	1,058	29,690	96	--	--
2000	1,058	36,647	4	37,709	5,630	1,145	30,934	99	--	--
Red meat and poultry										
1996	1,769	75,303	2,769	79,841	7,976	1,734	70,130	209	--	--
1997	1,734	76,322	3,065	81,120	8,839	1,924	70,357	208	--	--
1998	1,924	78,636	3,464	84,024	8,950	2,018	73,057	214	--	--
1999	2,018	81,516	3,821	87,355	9,014	1,971	76,369	221	--	--
2000	1,971	82,047	4,008	88,026	9,161	2,024	76,842	221	--	--

-- = Not available. Values for the last 2 years are forecasts. 1. Total including farm production for red meat and federally inspected plus nonfederally inspected for poultry. 2. Retail-weight basis. 3. Red meat, carcass to retail conversion; poultry, ready-to-cook production to retail weight. 4. Beef: Medium #1, Nebraska Direct 1,100-1,300 lb.; pork: barrows and gilts, Iowa, Southern Minnesota; veal: farm price of calves; lamb and mutton: choice slaughter lambs, San Angelo; broilers: wholesale 12-city average; turkeys: wholesale NY 8-16 lb. young hens. 5. Carcass weight for red meats and certified ready-to-cook for poultry. 6. Beginning in 1989, veal trade is no longer reported separately. *Information contact: LaVerne Williams (202) 694-5190*

Table 11—U.S. Egg Supply & Use

	Beg. stocks	Production	Imports	Total supply	Exports	Hatching use	Ending stocks	Consumption Total	Consumption Per capita	Primary market price*
	Million doz.								No.	¢/doz.
1993	13.5	6,005.8	4.7	6,023.9	158.9	769.6	10.7	5,084.6	236.4	72.5
1994	10.7	6,177.6	3.7	6,192.0	187.6	805.4	14.9	5,184.1	238.7	67.3
1995	14.9	6,215.6	4.1	6,234.6	208.9	847.2	11.2	5,167.3	235.6	72.9
1996	11.2	6,350.7	5.4	6,367.3	253.1	863.8	8.5	5,241.8	236.8	88.2
1997	8.5	6,473.1	6.9	6,488.5	227.8	894.7	7.4	5,358.6	240.1	81.2
1998	7.4	6,657.9	5.8	6,671.2	218.8	921.8	8.4	5,522.2	244.9	75.8
1999	8.4	6,912.0	7.4	6,927.8	161.7	941.7	7.6	5,816.8	255.6	65.6
2000	7.6	7,060.0	4.0	7,071.6	160.0	975.0	5.0	5,931.6	258.6	60.9

Values for the last year are forecasts. Values for previous year are preliminary. * Cartoned grade A large eggs, New York.
Information contact: LaVerne Williams (202) 694-5190

Table 12—U.S. Milk Supply & Use[1]

	Production	Farm use	Commercial Farm Marketings	Commercial Beg. stocks	Imports	Total commercial supply	CCC net removals	Commercial Ending stocks	Commercial Disappearance	All milk price[1]	CCC net removals Skim solids basis	CCC net removals Total solid basis[2]
	Million lbs. (milkfat basis)									$/cwt	Billion lbs.	
1992	150.9	1.9	149.0	4.5	2.5	155.9	9.9	4.7	141.3	13.09	2.0	5.2
1993	150.6	1.8	148.8	4.7	2.8	156.3	6.6	4.5	145.1	12.80	3.9	5.0
1994	153.6	1.7	151.9	4.5	2.9	159.3	4.8	4.3	150.3	12.97	3.7	4.2
1995	155.3	1.6	153.7	4.3	2.9	160.9	2.1	4.1	154.9	12.74	4.4	3.5
1996	154.0	1.5	153.5	4.1	2.9	159.5	0.1	4.7	154.7	14.74	0.7	0.5
1997	156.1	1.4	154.7	4.7	2.7	162.1	1.1	4.9	156.1	13.34	3.7	2.7
1998	157.4	1.4	156.1	4.9	4.6	165.5	0.4	5.3	159.9	15.42	4.0	2.6
1999	162.7	1.3	161.4	5.3	4.7	171.4	0.3	6.1	164.9	14.38	6.5	4.0
2000	166.0	1.3	164.7	6.1	4.0	174.9	0.6	5.5	168.8	12.55	6.6	4.2

Values for latest year are forecasts. Values for the preceding year are preliminary. 1. Delivered to plants and dealers; does not reflect deductions.
2. Arbitrarily weighted average of milkfat basis (40 percent) and solids basis (60 percent). *Information contact: Jim Miller (202) 694-5184*

Table 13—Poultry & Eggs

	Annual 1997	Annual 1998	Annual 1999	1999 Jan	1999 Aug	1999 Sep	1999 Oct	1999 Nov	1999 Dec	2000 Jan
Broilers										
Federally inspected slaughter certified (mil. lb.)	27,270.7	27,862.7	29,678.7	2,425.7	2,516.4	2,497.9	2,474.7	2,404.3	2,466.0	2,395.9
Wholesale price, 12-city (cents/lb.)	58.8	63.1	58.1	59.3	57.6	57.2	54.9	59.5	58.4	55.5
Price of grower feed ($/ton)[1]	157.7	128.7	102.8	116.6	96.5	100.0	97.1	97.1	99.5	104.5
Broiler-feed price ratio[2]	4.7	6.3	7.2	6.5	7.5	7.3	6.9	7.7	7.4	6.7
Stocks beginning of period (mil. lb.)	641.3	606.8	711.1	711.1	861.9	835.3	884.7	811.1	787.1	795.6
Broiler-type chicks hatched (mil.)	8,321.6	8,495.1	8,708.1	735.3	741.3	699.7	697.8	673.7	747.9	749.4
Turkeys										
Federally inspected slaughter certified (mil. lb.)	5,477.9	5,280.6	5,293.0	410.9	468.8	454.9	472.3	490.0	430.0	398.3
Wholesale price, Eastern U.S. 8-16 lb. young hens (cents/lb.)	64.9	62.2	69	57.7	73.6	76.3	79.3	79.0	72.4	61.6
Price of turkey grower feed ($/ton)[1]	142.7	115.7	94.9	107.1	90.7	92.7	90.8	91.2	91.7	95.8
Turkey-feed price ratio[2]	5.6	6.7	8.7	6.5	9.5	9.6	10	10.0	9.2	7.6
Stocks beginning of period (mil. lb.)	328.0	415.1	304.3	304.3	599.0	580.3	596.4	494.5	252.3	254.3
Poults placed in U.S. (mil.)	321.5	297.8	297.4	24.6	24.8	21.8	22.3	23.5	25.5	24.7
Eggs										
Farm production (mil.)	77,677	79,905	82,939	6,979	6,971	6,860	7,131	7,016	7,279	7,150
Average number of layers (mil.)	304	313	323	322	320	322	325	328	329	329
Rate of lay (eggs per layer on farms)	255.3	255.4	256.8	21.7	21.8	21.3	21.9	21.4	22.1	21.8
Cartoned price, New York, grade A large (cents/doz.)[3]	81.2	75.8	65.6	79.9	67.4	62.4	56.5	67.2	65.4	62.2
Price of laying feed ($/ton)[1]	160.0	137.5	123.2	122.9	116.8	121.9	128.5	108.1	121.4	130.3
Egg-feed price ratio[2]	8.8	9.8	9.8	11.7	10.1	9.3	7.8	11.9	10.1	8.9
Stocks, first of month Frozen (mil. doz.)	7.7	7.4	8.4	8.4	8.5	6.7	7.2	6.8	6.4	7.6
Replacement chicks hatched (mil.)	424.5	438.4	448.8	35.7	35.5	38.8	38.6	33.1	32.7	34.1

1. Calculated from price ratios that were revised February 1995. 2. Pounds of feed equal in value to 1 dozen eggs or 1 lb. of broiler or turkey liveweight (revised February 1995). 3. Price of cartoned eggs to volume buyers for delivery to retailers. *Information contact: LaVerne Williams (202) 694-5190*

Table 14—Dairy

	Annual			1999						2000
	1997	1998	1999	Jan	Aug	Sep	Oct	Nov	Dec	Jan
Class III (BFP before 2000) 3.5% fat	12.1	14.2	12.43	16.3	15.79	16.26	11.49	9.79	9.63	10.05
Wholesale prices										
Butter, Central States (cents/lb.)[1]	116.2	177.6	125.2	144.4	141.3	135.8	113.7	109.6	94.2	91.6
Am. cheese, Wis. assembly pt. (cents/lb.)	132.4	158.1	142.2	162.3	188.9	167.3	134	117.3	115.7	114.6
Nonfat dry milk (cents/lb.)[2]	110.0	106.9	103.5	108.9	103.8	104.9	104.5	103.4	101.7	100.9
USDA net removals										
Total (mil. lb.)[3]	1,090.3	365.6	343.5	21.1	20.3	30.3	27.2	40.3	55.1	88.4
Butter (mil. lb.)	38.4	6.3	3.7	0.0	0	0.5	0.5	0.8	1	2
Am. cheese (mil. lb.)	11.3	8.2	4.6	0.7	0.5	0.4	0.4	0.2	0.4	0.4
Nonfat dry milk (Mil. lb.)	298.0	326.4	540.6	23.4	36.3	39.4	33.4	38.7	68.8	60.3
Milk										
Milk prod. 20 states (mil. lb.)	133,314	134,900	140,029	11,679	11,534	11,200	11,549	11,315	11,928	12,256
Milk per cow (lb.)	17,180	17,501	18,103	1,518	1,487	1,445	1,491	1,459	1,538	1,505
Number of milk cows (1,000)	7,760	7,708	7,735	7,694	7,755	7,753	7,746	7,756	7,757	7,765
U.S. milk production (mil. lb.)[4]	156,091	157,348	162,711	13,633	13357	12964	13418	13,141	13,847	14247
Stocks, beginning[3]										
Total (mil. lb.)	4,714	4,907	5,301	5,301	9,461	8,277	7,485	7,037	6,056	6,193
Commercial (mil. lb.)	4,704	4,889	5,247	5,247	9418	8227	7442	6993	6011	6149
Government (mil. lb.)	10	18	27	27	44	50	43	44	44	44
Imports, total (mil. lb.)[3]	2,698	4,588	4,741	376	476	432	471	371	431	--
Commercial disappearance (mil. lb.)[3]	156,118	159,824	164933	12,235	14894	14044	14200	14,347	13975	--
Butter										
Production (mil. lb.)	1,151.2	1,081.9	1,166.8	123.3	66.1	78.8	93.0	90.4	117.2	140.6
Stocks, beginning (mil. lb.)	13.4	20.5	25.9	25.9	123.2	94.9	71.3	63.8	29.9	24.9
Commercial disappearance (mil. lb.)	1,108.7	1,136.4	1200.1	90.3	104.8	100	103.1	124.1	121.8	--
American cheese										
Production (mil. lb.)	3,285.6	3,325.8	3,585.9	289.7	294.5	283.6	295.8	287.3	307.4	312.7
Stocks, beginning (mil. lb.)	379.6	410.3	407.6	407.6	543.6	508.3	473.6	459.3	448.2	458
Commercial disappearance (mil. lb.)	3,269.0	3,349.7	3595.5	249.1	333.1	324.5	319	304.3	304.9	--
Other cheese										
Production (mil. lb.)	4,044.9	4,176.1	4,355.4	349.0	356.9	354.8	377.9	392.3	385.2	367.6
Stocks, beginning (mil. lb.)	107.3	70.0	109.5	109.5	205.1	186.4	177.6	162.6	143.5	163.3
Commercial disappearance (mil. lb.)	4,366.6	4,450.6	4666.1	311.2	409.6	398.4	428.1	446	406	--
Nonfat dry milk										
Production (mil. lb.)	1,271.6	1,135.4	1,377.6	120.0	99.5	90.6	103	100.6	129.3	131.1
Stocks, beginning (mil. lb.)	71.1	103.3	56.3	56.3	141.1	101.3	87.2	84.0	86.8	139.5
Commercial disappearance (mil. lb.)	894.1	867.5	765.4	72.1	--	--	--	--	--	--
Frozen dessert										
Production (mil. gal.)[5]	1,290.0	1,325.9	1,286.0	80.9	126.0	108.5	93.9	87.6	80.4	85.3
	Annual			1998			1999			
	1997	1998	1999	II	III	IV	I	II	III	IV
Milk production (mil. lb.)	156,091	157,348	162,711	40,767	38,513	38,901	40,505	42,029	39,771	40,406
Milk per cow (lb.)	16,871	17,189	17,771	4,447	4,211	4,262	4,437	4,591	4,337	4,406
No. of milk cows (1,000)	9,252	9,154	9,156	9,167	9,145	9,128	9,128	9,155	9,171	9,170
Milk-feed price ratio	1.54	1.97	2.03	1.71	2.05	2.46	2.20	1.81	2.12	1.99
Returns over concentrate costs ($/cwt milk)	9.80	12.15	11.45	10.40	12.25	14.80	13.00	9.90	11.90	11.00

-- = Not available. Quarterly values for latest year are preliminary. 1. Grade AA Chicago before June 1998. 2. Prices paid f.o.b. Central States production area. 3. Milk equivalent, fat basis. 4. Monthly data ERS estimates. 5. Hard ice cream, ice milk, and hard sherbet. *Information contact: LaVerne Williams (202) 694-5190*

Table 15—Wool

	Annual			1998			1999			
	1997	1998	1999	II	III	IV	I	II	III	IV
U.S. wool price (¢/lb.)[1]	238	162	110	178	142	115	115	116	110	98
Imported wool price (¢/lb.)[2]	206	164	136	176	141	141	146	142	133	125
U.S. mill consumption, scoured										
Apparel wool (1,000 lb.)	130,386	98,373	--	29,577	21,948	17,530	17,767	17,352	16,253	14,096
Carpet wool (1,000 lb.)	13,576	16,331	--	4,052	4,020	4,388	4,538	3,855	3,426	3,198

-- = Not available. 1. Wool price delivered at U.S. mills, clean basis, Graded Territory 64's (20.60-22.04 microns) staple 2-3/4" and up. 2. Wool price, Charleston, SC warehouse, clean basis, Australian 60/62's, type 64A (24 micron). Duty since 1982 has been 10 cents. *Information contact: Mae Dean Johnson (202) 694-5299*

Table 16—Meat Animals

	Annual			1999						2000
	1997	1998	1999	Jan	Aug	Sep	Oct	Nov	Dec	Jan
Cattle on feed (7 states, 1000+ head capacity)										
Number on feed (1,000 head)[1]	8,943	9,455	9,021	8,917	8,175	8,783	9,776	10,020	9,752	9,885
Placed on feed (1,000 head)	20,765	19,697	21,446	1,563	2,345	2,609	1,823	1,408	1,931	1,606
Marketings (1,000 head)	19,552	19,126	19,126	1,560	1,682	1,560	1,530	1,601	1,747	1,749
Other disappearance (1,000 head)	701	691	676	42	55	63	62	75	51	47
Market prices ($/cwt)										
Slaughter cattle										
Choice steers, 1,100-1,300 lb.										
Texas	65.99	61.75	65.89	63.13	66.05	69.63	70.28	69.01	69.07	68.88
Neb. direct	66.32	61.48	65.65	62.01	66.06	69.58	70.31	69.05	67.97	68.24
Boning utility cows, Sioux Falls	34.27	36.20	38.40	35.93	38.00	39.44	37.88	38.80	39.19	38.80
Feeder steers										
Medium no. 1, Oklahoma City										
600-650 lb.	81.34	77.70	82.64	79.14	83.20	82.03	87.19	91.33	93.13	94.55
750-800 lb.	76.19	71.80	76.39	73.07	78.73	80.53	82.59	88.48	87.50	84.03
Slaughter hogs										
Barrows and gilts, 51-52 percent lean										
National Base converted to live equal.	54.30	34.72	34.02	29.65	35.71	35.84	35.54	37.70	38.32	41.58
Sows, Iowa, S.MN 1-2 300-400 lb.	40.24	20.29	19.26	15.43	19.90	19.73	19.25	19.96	24.60	25.35
Slaughter sheep and lambs										
Lambs, Choice, San Angelo	87.95	74.20	75.97	67.88	76.71	74.81	78.00	83.29	73.71	76.83
Ewes, Good, San Angelo	49.33	40.90	42.32	40.25	42.79	36.44	41.17	41.21	45.67	51.92
Feeder lambs										
Choice, San Angelo	104.43	79.59	81.05	82.00	76.71	75.25	82.54	88.67	84.63	99.54
Wholesale meat prices, Midwest										
Boxed beef cut-out value										
Choice, 700-800 lb.	102.75	98.60	111.55	97.98	115.13	120.24	117.20	116.88	113.74	112.18
Select, 700-800 lb.	96.15	92.19	101.99	95.22	102.69	104.49	103.19	105.67	106.09	106.88
Canner and cutter cow beef	64.50	61.49	66.66	63.00	67.63	66.00	--	68.38	69.86	72.38
Pork cutout	--	53.07	53.45	47.72	56.56	55.75	54.50	58.64	57.75	62.18
Pork loins, bone-in, 1/4 " trim,14-19 lb.	128.75	102.04	100.25	93.35	104.99	98.98	93.13	102.57	99.29	110.66
Pork bellies, 12-14 lb.	73.91	52.38	57.43	50.76	57.87	70.83	71.50	71.37	80.45	82.40
Hams, bone-in, trimmed, 20-23 lb.	--	--	47.90	43.78	53.65	55.68	66.50	55.96	47.41	46.50
All fresh beef retail price	253.77	253.28	260.50	258.00	260.50	269.70	263.50	265.20	265.80	268.40
Commercial slaughter (1,000 head)[2]										
Cattle	36,318	35,465	36,150	2,723	3099	3,094	2,940	2875	2,937	--
Steers	17,529	17,428	17,936	1,293	1541	1,475	1,376	1425	1,432	--
Heifers	11,528	11,448	11,866	945	1027	1,051	980	901	980	--
Cows	6,564	5,983	5,708	441	473	511	533	498	474	--
Bull and stags	696	606	639	44	57	57	52	51	51	--
Calves	1,575	1,458	1,484	100	121	105	104	113	93	--
Sheep and lambs	3,911	3,911	3,698	300	307	305	329	356	282	--
Hogs	91,960	101,029	101,544	7,908	8641	8,944	8,896	8885	8,141	--
Barrows and gilts	88,409	97,030	97,738	7,602	8313	8,639	8,581	8583	7,881	--
Commercial production (mil. lb.)										
Beef	25,384	25,653	25,656	1,998	2275	2,265	2,144	2113	2,276	--
Veal	324	252	250	17	20	19	20	20	20	--
Lamb and mutton	257	248	247	20	19	20	19	19	19	--
Pork	17,244	18,981	18,981	1,501	1618	1,698	1,707	1705	1,618	--

	Annual			1998		1999				2000
	1997	1998	1999	III	IV	I	II	III	IV	I
Hogs and pigs (U.S.)[3]										
Inventory (1,000 head)[1]	56,124	61,158	62,206	62,213	63,488	62,206	60,191	60,869	60,776	59,407
Breeding (1,000 head)[1]	6,578	6,957	6,682	6,958	6,875	6,682	6,527	6,515	6,301	6,244
Market (1,000 head)[1]	49,546	54,200	55,523	55,254	56,612	55,523	53,663	54,380	54,474	53,164
Farrowings (1,000 head)	11,479	12,061	11,666	3,054	2,993	2,891	2,986	2,920	2,869	2,810
Pig crop (1,000 head)	99,584	105,004	102,569	26,634	25,902	25,247	26,270	25860	25192	--
Cattle on Feed, 7 states (1,000 head)[4]										
Steers and steer calves	5,410	5,803	5,432	4,608	5,086	5,432	5,341	4,849	5,286	5768.00
Heifers and heifer calves	3,455	3,615	3,552	3,191	3,268	3,552	3,527	3,302	3,479	3942.00
Cows and bulls	78	59	37	37	32	37	31	44	28	42.00

-- = Not available. 1. Beginning of period. 2. Classes estimated. 3. Quarters are Dec. of preceding year to Feb. (I), Mar.-May (II), June-Aug. (III), and Sept.-Nov. (IV). 4. Beginning of period. The 7 states include AZ, CA, CO, IA, KS, NE, and TX. *Information contact: Leland Southard (202) 694-5187*

Crops & Products

Table 17—Supply & Utilization[1,2]

	Area: Set-aside[3]	Area: Planted	Area: Harvested	Yield	Production	Total supply[4]	Feed & residual	Other domestic use	Exports	Total use	Ending stocks	Farm price[5]
	Mil. Acres			*Bu./acre*				*Mil. bu.*				*$/bu.*
Wheat												
1995/96	6.1	69.0	61.0	35.8	2,183	2,757	154	986	1,241	2,381	376	4.55
1996/97	--	75.1	62.8	36.3	2,277	2,746	308	993	1,002	2,302	444	4.30
1997/98	--	70.4	62.8	39.5	2,481	3,020	251	1,007	1,040	2,298	722	3.38
1998/99*	--	65.8	59.0	43.2	2,547	3,373	397	988	1,042	2,427	946	2.65
1999/2000	--	62.8	53.9	42.7	2,302	3,343	300	996	1,050	2,346	997	2.45-2.55
		Mil. acres		*Lb./acre*				*Mil. cwt (rough equiv)*				*$/cwt*
Rice[6]												
1995/96	0.5	3.1	3.1	5,621.0	173.9	212.8	--	6/ 105.6	82.2	187.8	25.0	9.15
1996/97	--	2.8	2.8	6,120.0	171.6	207.1	--	6/ 102.7	77.2	179.9	27.2	9.96
1997/98	--	3.1	3.1	5,897.0	183.0	219.4	--	6/ 104.6	86.9	191.5	27.9	9.70
1998/99*	--	3.3	3.3	5,669.0	188.1	226.5	--	6/ 119.1	85.3	204.4	22.1	8.89
1999/2000	--	3.6	3.6	5,908.0	210.5	243.3	--	6/ 116.7	87.0	203.7	39.6	5.80-6.20
		Mil. acres		*Bu./acre*				*Mil. bu.*				*$/bu.*
Corn												
1995/96	7.7	71.5	65.2	113.5	7,400	8,974	4,708	1,612	2,228	8,548	426	3.24
1996/97	--	79.2	72.6	127.1	9,233	9,672	5,299	1,692	1,797	8,789	883	2.71
1997/98	--	79.5	72.7	126.7	9,207	10,099	5,505	1,782	1,504	8,791	1,308	2.43
1998/99*	--	80.2	72.6	134.4	9,759	11,085	5,496	1,822	1,981	9,298	1,787	1.94
1999/2000	--	77.4	70.5	133.8	9,437	11,239	5,650	1,900	1,950	9,500	1,739	1.85-1.95
		Mil. acres		*Bu./acre*				*Mil bu.*				$/bu.
Sorghum												
1995/96	1.7	9.4	8.3	55.6	459	530	295	19	198	512	18	3.19
1996/97	--	13.1	11.8	67.3	795	814	516	45	205	766	47	2.34
1997/98	--	10.1	9.2	69.2	634	681	365	55	212	632	49	2.21
1998/99*	--	9.6	7.7	67.3	520	569	262	45	197	504	65	1.66
1999/2000	--	9.3	8.5	69.7	595	660	325	55	225	605	55	1.55-1.65
		Mil. acres		*Bu./acre*				*Mil. bu.*				*$/bu.*
Barley												
1995/96	2.9	6.7	6.3	57.2	359	513	179	172	62	413	100	2.89
1996/97	--	7.1	6.7	58.5	392	529	217	172	31	419	109	2.74
1997/98	--	6.7	6.2	58.1	360	510	144	172	74	390	119	2.38
1998/99*	--	6.3	5.9	60.0	352	501	161	170	28	360	142	1.98
1999/2000	--	5.2	4.8	59.2	282	454	125	172	30	327	127	2.05-2.15
		Mil. acres		*Bu./acre*				*Mil. bu.*				*$/bu.*
Oats												
1995/96	0.8	6.2	3.0	54.6	161	342	182	92	2	276	66	1.67
1996/97	--	4.6	2.7	57.7	153	317	153	95	3	250	67	1.96
1997/98	--	5.1	2.8	59.5	167	332	161	95	2	258	74	1.60
1998/99*	--	4.9	2.8	60.2	166	348	170	95	2	266	81	1.10
1999/2000	--	4.7	2.5	59.6	146	328	150	96	2	248	80	1.05-1.15
		Mil. acres		*Bu./acre*				*Mil. bu.*				*$/bu.*
Soybeans[7]												
1995/96	--	62.6	61.6	35.3	2,177	2,516	112	1,370	851	2,333	183	6.72
1996/97	--	64.2	63.3	37.6	2,380	2,573	123	1,436	882	2,441	132	7.35
1997/98	--	70.0	69.1	38.9	2,689	2,826	156	1,597	873	2,626	200	6.47
1998/99*	--	72.0	70.4	38.9	2,741	2,944	204	1,590	801	2,595	348	4.93
1999/2000	--	73.8	72.5	36.5	2,643	2,994	159	1,600	910	2,669	325	4.50-4.90
								Mil. lbs.				*¢/lb.*
Soybean oil												
1995/96	--	--	--	--	15,240	16,472	--	13,465	992	14,457	2,015	24.75
1996/97	--	--	--	--	15,752	17,821	--	14,263	2,037	16,300	1,520	22.50
1997/98	--	--	--	--	18,143	19,723	--	15,262	3,079	18,341	1,382	25.84
1998/99*	--	--	--	--	18,081	19,546	--	15,655	2,372	18,027	1,520	19.90
1999/2000	--	--	--	--	18,080	19,680	--	16,000	1,550	17,550	2,130	14.50-16.50
								1,000 tons				*$/ton*[8]
Soybean meal												
1995/96	--	--	--	--	32,527	32,826	--	26,611	6,002	32,613	212	236.0
1996/97	--	--	--	--	34,210	34,524	--	27,320	6,994	34,314	210	270.9
1997/98	--	--	--	--	38,176	38,443	--	28,895	9,329	38,225	218	185.5
1998/99*	--	--	--	--	37,792	38,109	--	30,662	7,117	37,779	330	138.5
1999/2000	--	--	--	--	38,045	38,425	--	31,150	7,000	38,150	275	150-170

See footnotes at end of table, next page

Table 17—Supply & Utilization (continued)

	Area: Set-aside[3]	Area: Planted	Area: Harvested	Yield	Production	Total supply[4]	Feed & residual	Other domestic use	Exports	Total use	Ending stocks	Farm price[5]
	Mil. Acres			Lb./acre	Mil. Bales							¢/lb.
Cotton[9]												
1995/96	1.7	16.9	16.0	537	17.9	21.0	--	10.6	7.7	18.3	2.6	75.4
1996/97	0.3	14.7	12.9	705	18.9	22.0	--	11.1	6.9	18.0	4.0	69.3
1997/98	--	13.9	13.4	673	18.8	22.8	--	11.3	7.5	18.8	3.9	65.2
1998/99*	--	13.4	10.7	625	13.9	18.2	--	10.4	4.3	14.7	3.9	60.2
1999/2000*	--	14.9	13.4	608	17.0	21.0	--	10.1	6.5	16.6	4.4	--

-- = Not available or not applicable. *March 10, 2000 Supply and Demand Estimates. 1. Marketing year beginning June 1 for wheat, barley, and oats; August 1 for cotton and rice; September 1 for soybeans, corn, and sorghum; October 1 for soymeal and soyoil. 2. Conversion factors: Hectare (ha.) = 2.471 acres, 1 metric ton = 2,204.622 pounds, 36.7437 bushels of wheat or soybeans, 39.3679 bushels of corn or sorghum, 45.9296 bushels of barley, 68.8944 bushels of oats, 22.046 cwt of rice, and 4.59 480-pound bales of cotton. 3. Includes diversion, acreage reduction, 50-92, & 0-92 programs. 0/92 & 50/92 set-aside includes idled acreage and acreage planted to minor oilseeds, sesame, and crambe. 4. Includes imports. 5. Marketing-year weighted average price received by farmers. Does not include an allowance for loans outstanding and government purchases. 6. Residual included in domestic use. 7. Includes seed. 8. Simple average of 48 percent protein, Decatur. 9. Upland and extra-long staple. Stocks estimates based on Census Bureau data, resulting in an unaccounted difference between supply and use estimates and changes in ending stocks. *Information contacts: Wheat, rice, feed grains, Jenny Gonzales (202) 694-5296; soybeans, soybean products, and cotton, Mae Dean Johnson (202) 694-5299*

Table 18—Cash Prices, Selected U.S. Commodities

	Marketing year[1] 1997/98	1998/99	1999/00	1999 Jan	Aug	Sep	Oct	Nov	Dec	2000 Jan
Wheat, no. 1 HRW, Kansas City ($/bu.)[2]	3.71	3.08	--	3.27	2.85	2.92	2.80	2.89	2.81	2.90
Wheat, DNS, Minneapolis ($/bu.)[3]	4.31	3.83	--	3.92	3.58	3.55	3.70	3.78	3.64	3.37
Rice, S.W. La. ($/cwt)[4]	18.92	16.79	--	16.60	14.68	14.38	14.00	13.85	13.58	13.00
Corn, no. 2 yellow, 30-day, Chicago ($/bu.)[5]	2.56	2.06	--	2.16	1.84	1.88	1.90	1.90	1.93	2.06
Sorghum, no. 2 yellow, Kansas City ($/cwt)[5]	4.11	3.29	--	3.41	3.24	2.97	2.71	2.71	2.87	3.20
Barley, feed, Duluth ($/bu.)	1.90	--	--	--	--	--	--	--	--	--
Barley, malting Minneapolis ($/bu.)	2.50	--	--	--	--	--	--	--	--	--
U.S. cotton price, SLM, 1-1/16 in. (¢/lb.)[6]	67.79	--	--	56.20	49.72	48.39	49.46	48.12	46.65	51.92
Northern Europe prices cotton index (¢/lb.)[7]	72.11	--	--	55.78	50.98	49.26	47.36	46.13	44.24	47.80
U.S. M 1-3/32 in. (¢/lb.)[8]	77.98	--	--	--	58.63	56.30	56.88	54.31	52.75	58.69
Soybeans, no. 1 yellow, 30-day Chicago ($/bu)	6.51	--	--	5.29	4.45	4.65	4.60	4.50	4.55	4.84
Soybean oil, crude, Decatur (¢/lb.)	25.84	19.90	--	22.88	16.50	16.79	16.08	15.63	15.63	15.56
Soybean meal, 48% protein, Decatur ($/ton)	185.54	138.50	--	138.80	141.69	150.63	153.57	154.70	154.00	163.41

-- = No quotes. 1. Beginning June 1 for wheat and barley; Aug. 1 for rice and cotton; September 1 for corn, sorghum, and soybeans; October 1 for soymeal and oil. 2. Ordinary protein. 3. 14 percent protein. 4. Long grain, milled basis. 5. Marketing year 1997/98 data are preliminary. 6. Average spot market. 7. Liverpool Cotlook "A" Index; average of 5 lowest prices of 13 selected growths. 8. Cotton, Memphis territory growths. *Information contacts: Wheat, rice, and feed, Jenny Gonzales (202) 694-5296; soybeans, soybean products, and cotton, Mae Dean Johnson (202) 694-5299*

Table 19—Farm Programs, Price Supports, Participation, & Payment Rates

	Target price	Basic loan rate	Findley or announced loan rate[1]	Total deficiency payment rate	Effective base acres[2]	Program[3]	Flexibility contract payment rate	Acres under contract	Contract payment yields	Participation rate[4]
	$/bu.				Mil. acres	Percent of base	$/bu.	Mil. acres	Bu./cwt	Percent
Wheat										
1995/96	4.00	2.69	2.58	0.00	77.70	0/0/0	--	--	--	85
1996/97	--	--	2.58	--	--	--	0.87	76.70	34.70	99
1997/98	--	--	2.58	--	--	--	0.631	76.7	34.70	--
1998/99	--	--	2.58	--	--	--	0.663	78.9	34.50	--
1999/2000[5]	--	--	2.58	--	--	--	0.637	79.0	34.50	--
		$/cwt					$/cwt			
Rice										
1995/96	10.71	6.50	6.50 [6]	3.22 #	4.20	5/0/0	--	--	--	95
1996/97	--	6.50	--	--	--	--	2.77	4.20	48.27	99
1997/98	--	6.50	--	--	--	--	2.710	4.2	48.17	--
1998/99	--	6.50	--	--	--	--	2.921	4.2	48.17	--
1999/2000[5]	--	6.50	--	--	--	--	2.820	4.2	48.15	--
		$/bu.					$/bu.			
Corn										
1995/96	2.75	1.94	1.89	0.00	81.80	7.5/0/0	--	--	--	82
1996/97	--	--	1.89	--	--	--	0.25	80.70	102.90	98
1997/98	--	--	1.89	--	--	--	0.486	80.9	102.80	--
1998/99	--	--	1.89	--	--	--	0.377	82.0	102.60	--
1999/2000[5]	--	--	1.89	--	--	--	0.363	81.9	102.60	--
		$/bu.					$/bu.			
Sorghum										
1995/96	2.61	1.84	1.80	0.00	13.30	0/0/0	--	--	--	77
1996/97	--	--	1.81	--	--	--	0.32	13.10	57.30	99
1997/98	--	--	1.76	--	--	--	0.544	13.1	57.30	--
1998/99	--	--	1.74	--	--	--	0.452	13.6	56.90	--
1999/2000[5]	--	--	1.74	--	--	--	0.435	13.7	56.90	--
		$/bu.					$/bu.			
Barley										
1995/96	2.36	1.58	1.54	0.00	10.70	0/0/0	--	--	--	82
1996/97	--	--	1.55	--	--	--	0.33	10.50	47.30	99
1997/98	--	--	1.57	--	--	--	0.277	10.5	47.20	--
1998/99	--	--	1.56	--	--	--	0.284	11.2	46.70	--
1999/2000[5]	--	--	1.59	--	--	--	0.271	11.2	46.60	--
		$/bu.					$/bu.			
Oats										
1995/96	1.45	1.00	0.97	0.00	6.50	0/0/0	--	--	--	44
1996/97	--	--	1.03	--	--	--	0.03	6.20	50.80	97
1997/98	--	--	1.11	--	--	--	0.031	6.2	50.80	--
1998/99	--	--	1.11	--	--	--	0.031	6.5	50.70	--
1999/2000[5]	--	--	1.13	--	--	--	0.030	6.5	50.60	--
		$/bu.					$/bu.			
Soybeans[8]										
1995/96	--	--	4.92	--	--	--	--	--	--	--
1996/97	--	--	4.97	--	--	--	--	--	--	--
1997/98	--	--	5.26	--	--	--	--	--	--	--
1998/99	--	--	5.26	--	--	--	--	--	--	--
1999/2000	--	--	5.26	--	--	--	--	--	--	--
		¢/lb.					¢/lb.			
Upland cotton										
1995/96	72.90	51.92	51.92 [9]	0.00 #	15.50	0/0/0	--	--	--	79
1996/97	--	51.92	--	--	--	--	8.88	16.20	610.00	99
1997/98	--	51.92	--	--	--	--	7.625	16.2	608.00	--
1998/99	--	51.92	--	--	--	--	8.173	16.4	604.00	--
1999/2000[5]	--	51.92	--	--	--	--	7.880	16.4	604.00	--

-- = Not available. 1. There are no Findley loan rates for rice or cotton. See footnotes 5 and 7. 2. Prior to 1996, national effective crop acreage base as determined by FSA. Net of CRP. 3. Program requirements for participating producers (mandatory acreage reduction program/mandatory paid land diversion/optional paid land diversion). Acres idled must be devoted to a conserving use to receive program benefits. 4. Percentage of effective base enrolled in acreage reduction programs. Starting in 1996, participation rate is the percent of eligible acres that entered production flexibility contracts. 5. Estimated payment rates and acres under contract. 6. A marketing loan program has been in effect for rice since 1985/86. Loans may be repaid at the lower of: a) the loan rate or b) the adjusted world market price (announced weekly). Loans cannot be repaid at less than a specified fraction of the loan rate. Data refer to marketing-year average loan repayment rates. Beginning with the 1996 crop, loans are repaid at the lower of the loan rate plus accumulated interest or the adjusted world price. 7. Guaranteed payment rates for producers in the 50/85/92 program were $0.034/lb. for upland cotton and $4.21/cwt. for rice. 8. There are no target prices, base acres, acreage reduction programs or deficiency payment rates for soybeans. 9. A marketing loan program has been in effect for cotton since 1986/87. In 1987/88 and after, loans may be repaid at the lower of: a) the loan rate or b) the adjusted world market price (announced weekly; Plan B). Starting in 1991/92, loans cannot be repaid at less than 70 percent of the loan rate. Data refer to annual average loan repayment rates. Beginning with the 1996 crop, loans are repaid at the lower of the loan rate plus accumulated interest or the adjusted world price.

Note: The 1996 Farm Act replaced target prices and deficiency payments with fixed annual payments to producers. *Information contact: Brenda Chewning, Farm Service Agency (202) 720-8838*

Table 20—Fruit

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Citrus[1]										
Production (1,000 tons)	10,860	11,285	12,452	15,274	14,561	15,799	15,712	17,271	17,770	13,680
Per capita consumpt. (lb.)[2]	21.4	19.1	24.4	26.0	25.0	24.1	24.9	27.0	27.0	--
Noncitrus[3]										
Production (1.000 tons)	15.640	15.740	17.124	16.554	17.339	16.348	16.103	18.363	16.509	17.118
Per capita consumpt. (lb.)[2]	70.4	70.6	73.8	73.9	75.6	73.7	73.9	76.3	76.2	--

	1999								2000	
	Feb	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
Grower prices										
Apples (¢/pound)[4]	15.0	12.7	12.4	18.4	23.2	23.5	23.3	23.7	23.5	21.1
Pears (¢/pound)[4]	18.10	17.80	23.45	16.10	15.75	21.95	21.90	20.70	20.70	19.30
Oranges ($/box)[5]	5.60	8.78	10.10	11.48	7.98	10.25	4.33	3.41	3.27	3.5
Grapefruit ($/box)[5]	1.60	8.78	10.67	7.45	8.18	6.80	5.21	3.71	2.40	3.6
Stocks, ending										
Fresh apples (mil. lb.)	3,407	732	361	103	2,835	6,165	5,524	4,653	4,017	3,231
Fresh pears (mil. lb.)	177	10	12	130	552	515	400	299	241	193
Frozen fruits (mil. lb.)	1,015	877	1,101	1,183	1,136	1,631	1,583	1,455	1,338	1,263.1
Frozen conc.orange juice (mil. single-strength gallons)	92	804	744	661	589	482	450	543	644	785

-- = Not available. 1. Year shown is when harvest concluded. 2. Fresh per capita consumption. 3. Calendar year. 4. Fresh use. 5. U.S. equivalent on-tree returns. *Information contact: Susan Pollack (202) 694-5251*

Table 21—Vegetables

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Production[1]										
Total vegetables (1,000 cwt)	562,938	565,754	689,070	688,824	782,505	747,988	762,952	754,220	729,576	831,986
Fresh (1,000 cwt)[2,4]	254,039	242,733	389,597	387,330	412,880	393,398	409,317	427,183	416,785	448,939
Processed (tons)[3,4]	15,444,970	16,151,030	14,973,630	15,074,707	18,481,238	17,729,497	17,681,732	16,351,849	15,639,548	19,152,331
Mushrooms (1,000 lbs)[5]	749,151	746,832	776,357	750,799	782,340	777,870	776,677	808,678	848,401	--
Potatoes (1,000 cwt)	402,110	417,622	425,367	430,349	469,425	445,099	499,254	467,091	475,771	478,398
Sweet potatoes (1,000 cwt)	12,594	11,203	12,005	11,027	13,380	12,821	13,216	13,327	12,382	11,980
Dry edible beans (1,000 cwt)	32,379	33,765	22,615	21,862	28,950	30,689	27,912	29,370	30,418	33,230

	1999								2000	
	Feb	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
Shipments (1,000 cwt)										
Fresh	19,644	36,831	21,355	17,816	20,143	17,722	19,204	22,478	19,965	25,730
Iceberg lettuce	2,854	4,370	3,287	3,079	3,952	3,382	2,918	3,535	2,889	3,776
Tomatoes, all	3,373	4,053	2,766	2,478	3,599	3,096	3,205	3,986	3,642	4,463
Dry-bulb onions	2,845	3,759	3,029	3,124	4,461	3,764	3,597	3,891	3,232	3,910
Others[6]	10,572	24,649	12,273	9,135	8,131	7,480	9,484	11,066	10,202	13,581
Potatoes, all	11,691	13,579	9,825	9,217	12,148	10,928	12,745	15,578	12,201	17,170
Sweet potatoes	227	196	155	172	321	313	681	371	205	349

-- = Not available. 1. Calendar year except mushrooms. 2. Includes fresh production of asparagus, broccoli, carrots, cauliflower, celery, sweet corn, lettuce, honeydews, onions, & tomatoes through 1991. 3. Includes processing production of snap beans, sweet corn, green peas, tomatoes, cucumbers (for pickles), asparagus, broccoli, carrots, and cauliflower. 4. Data after 1991 not comparable to previous years because commodity estimates reinstated in 1992 are included. 5. Fresh and processing agaricus mushrooms only. Excludes specialty varieties. Crop year July 1- June 30. 6. Includes snap beans, broccoli, cabbage, cauliflower, celery, sweet corn, cucumbers, eggplant, bell peppers, honeydews, and watermelons. *Information contact: Gary Lucier (202) 694-5253*

Table 22—Other Commodities

	Annual			1998			1999			
	1997	1998	1999	II	III	IV	I	II	III	IV
Sugar										
Production[1]	7,418	7,891	9,083	824	733	3,959	2,636	1,031	749	4667.13
Deliveries[1]	9,755	9,851	10,167	2,465	2,616	2,508	2,271	2,594	2,693	2609.09
Stocks, ending[1]	3,377	3,423	3,855	2,881	1,679	3,422	4,219	3,184	1,639	3855.00
Coffee										
Composite green price[2]										
N.Y. (¢/lb.)	146.49	114.43	88.49	117.73	98.57	97.83	94.37	90.41	77.40	91.79

	Annual			1999						2000
	1997	1998	1999	Jan	Aug	Sep	Oct	Nov	Dec	Jan
Tobacco										
Avg. price to grower[3]										
Flue-cured ($/lb.)	1.73	1.75	--	--	1.64	1.75	1.82	--	--	--
Burley ($/lb.)	1.91	1.91	--	1.90	--	--	--	1.90	1.91	1.90
Domestic taxable removals										
Cigarettes (bil.)	471.4	457.9	--	31.2	--	--	--	--	--	--
Large cigars (mil.)[4]	3,552	3,721	--	245.8	--	--	--	--	--	--

-- = Not available. 1. 1,000 short tons, raw value. Quarterly data shown at end of each quarter. 2. Net imports of green and processed coffee. 3. Crop year July-June for flue-cured, October-September for burley. 4. Includes imports of large cigars. *Information contacts: sugar and coffee, Fannye Jolly (202) 694-5249; tobacco, Tom Capehart (202) 694-5245*

World Agriculture

Table 23—World Supply & Utilization of Major Crops, Livestock & Products

	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99 F	1999/2000 F
	Million units									
Wheat										
Area (hectares)	231.4	222.5	222.9	222.0	214.5	219.2	230.3	227.9	224.4	216.6
Production (metric tons)	588.0	542.9	562.4	558.8	524.0	538.5	582.8	609.4	588.8	585.6
Exports (metric tons[1]	101.1	111.2	113.0	101.7	101.5	99.5	103.6	103.3	100.5	104.3
Consumption (metric tons)[2]	561.9	555.5	550.3	561.6	547.0	549.3	577.1	584.6	591.5	594.3
Ending stocks (metric tons)[3]	145.0	132.5	144.5	141.7	118.7	107.9	113.5	138.3	135.6	126.9
Coarse grains										
Area (hectares)	317.2	322.6	325.9	318.6	324.2	313.8	322.8	311.6	309.3	304.1
Production (metric tons)	828.8	810.4	871.5	798.8	871.0	802.8	908.2	883.2	892.0	872.7
Exports (metric tons[1]	88.8	95.6	93.0	84.8	97.8	87.3	94.8	85.6	96.4	98.4
Consumption (metric tons)[2]	817.2	810.0	843.7	838.5	857.3	842.2	877.4	875.7	872.6	880.5
Ending stocks (metric tons)[3]	134.8	135.3	163.0	123.4	137.2	97.8	128.6	136.2	155.6	147.8
Rice, milled										
Area (hectares)	146.6	147.4	146.4	144.9	147.4	148.1	149.8	151.3	152.2	153.8
Production (metric tons)	352.0	354.7	355.7	355.4	364.5	371.4	380.4	386.9	393.8	398.3
Exports (metric tons[1]	12.2	14.3	14.9	16.3	20.9	19.7	18.8	27.3	25.0	23.0
Consumption (metric tons)[2]	347.4	356.7	357.7	358.2	366.6	371.4	379.6	383.3	390.4	397.3
Ending stocks (metric tons)[3]	59.2	57.2	55.2	52.4	50.4	50.5	51.3	54.9	58.2	59.3
Total grains										
Area (hectares)	695.2	692.5	695.2	685.5	686.1	681.1	702.9	690.8	685.9	674.5
Production (metric tons)	1,768.8	1,708.0	1,789.6	1,713.0	1,759.5	1,712.7	1,871.4	1,879.5	1,874.6	1,856.6
Exports (metric tons[1]	202.1	221.1	220.9	202.8	220.2	206.5	217.2	216.2	221.9	225.7
Consumption (metric tons)[2]	1,726.5	1,722.2	1,751.7	1,758.3	1,770.9	1,762.9	1,834.1	1,843.6	1,854.5	1,872.1
Ending stocks (metric tons)[3]	339.0	325.0	362.7	317.5	306.3	256.2	293.4	329.4	349.4	334.0
Oilseeds										
Crush (metric tons)	176.7	185.1	184.4	190.1	208.1	217.4	219.2	227.6	238.9	246.1
Production (metric tons)	215.7	224.3	227.5	229.4	261.9	258.4	262.0	287.0	292.8	295.7
Exports (metric tons)	33.4	37.6	38.2	38.7	44.1	44.3	49.6	54.0	54.1	59.0
Ending stocks (metric tons)	23.4	21.9	23.6	20.3	27.2	22.2	17.1	24.7	28.0	25.8
Meals										
Production (metric tons)	119.3	125.2	125.2	131.7	142.1	147.2	149.7	155.2	163.6	168.1
Exports (metric tons)	40.7	42.2	40.8	44.9	46.7	49.7	50.7	51.8	54.2	54.6
Oils										
Production (metric tons)	58.1	60.6	61.1	63.7	69.6	73.0	75.9	76.6	81.8	85.6
Exports (metric tons)	20.5	21.3	21.3	24.3	27.1	26.0	29.1	29.9	31.5	31.9
Cotton										
Area (hectares)	33.2	34.8	32.6	30.6	32.2	35.9	33.8	33.7	32.9	32.2
Production (bales)	87.1	95.7	82.5	77.1	85.9	93.1	89.6	91.6	84.5	86.9
Exports (bales)	29.6	28.5	25.5	26.8	28.4	27.8	26.8	26.6	23.6	26.7
Consumption (bales)	85.5	85.7	85.5	85.3	85.5	86.9	89.0	88.4	85.2	89.0
Ending stocks (bales)	27.8	37.6	35.4	27.6	29.9	35.8	38.2	40.8	41.7	39.9
	1991	1992	1993	1994	1995	1996	1997	1998	1999 F	2000 F
Red meat[4]										
Production (metric tons)	117.7	117.3	119.3	124.6	129.5	124.2	127.9	131.4	132.8	133.1
Consumption (metric tons)	116.1	115.7	118.3	123.6	127.8	121.4	125.1	128.6	130.6	131.3
Exports (metric tons)[1]	7.5	7.4	7.4	8.1	8.2	8.4	9.0	8.9	9.0	9.3
Poultry[4]										
Production (metric tons)	39.6	38.0	40.5	43.2	47.5	50.4	52.7	53.5	55.6	57.4
Consumption (metric tons)	38.4	37.0	39.4	42.0	47.0	49.7	51.9	52.4	54.1	56.0
Exports (metric tons)[1]	2.8	2.4	2.8	3.6	4.5	5.2	5.6	5.7	5.9	6.2
Dairy										
Milk production (metric tons)[5]	377.6	378.4	377.6	378.4	380.7	379.8	380.8	383.7	384.9	387.2

-- = Not available. F = forecast. 1. Excludes intra-EU trade but includes intra-FSU trade. 2. Where stocks data are not available, consumption includes stock changes. 3. Stocks data are based on differing marketing years and do not represent levels at a given date. Data not available for all countries.
4. Calendar year data. 1990 data correspond with 1989/90, etc. 5. Data prior to 1989 no longer comparable.

Information contacts: Crops, Ed Allen (202) 694-5288; red meat and poultry, Leland Southard (202) 694-5187; dairy, LaVerne Williams (202) 694-5190

U.S. Agricultural Trade

Table 24—Prices of Principal U.S. Agricultural Trade Products

	Annual			1999					2000	
	1997	1998	1999	Feb	Sep	Oct	Nov	Dec	Jan	Feb
Export commodities										
Wheat, f.o.b. vessel, Gulf ports ($/bu.)	4.35	3.44	3.04	3.17	3.08	2.92	2.96	2.80	2.89	2.99
Corn, f.o.b. vessel, Gulf ports ($/bu.)	2.98	2.59	2.30	2.40	2.21	2.18	2.17	2.22	2.36	2.42
Grain sorghum, f.o.b. vessel, Gulf ports ($/bu.)	2.89	2.54	2.15	2.31	2.02	1.96	2.02	2.04	2.23	2.29
Soybeans, f.o.b. vessel, Gulf ports ($/bu.)	7.94	6.37	5.02	5.19	5.18	5.01	4.90	4.92	5.21	5.36
Soybean oil, Decatur (¢/lb.)	23.33	25.78	17.51	19.96	16.79	16.08	15.63	15.63	15.63	15.09
Soybean meal, Decatur ($/ton)	266.70	162.74	141.52	132.32	150.64	153.57	154.71	154.00	163.41	170.51
Cotton, 7-market avg. spot (¢/lb.)	69.62	67.04	52.30	55.46	48.39	49.41	48.12	46.65	51.92	54.29
Tobacco, avg. price at auction (¢/lb.)	182.74	179.77	177.82	195.04	175.03	181.47	176.99	190.56	191.02	192.05
Rice, f.o.b., mill, Houston ($/cwt)	20.88	18.95	16.99	18.22	16.00	16.00	15.80	15.75	15.55	15.25
Inedible tallow, Chicago (¢/lb.)	20.75	17.67	12.99	12.53	14.38	16.50	14.50	14.00	11.94	10.22
Import commodities										
Coffee, N.Y. spot ($/lb.)	2.05	1.39	1.05	1.02	0.86	0.95	1.14	1.29	1.19	1.15
Rubber, N.Y. spot (¢/lb.)	55.40	40.57	36.66	38.58	34.32	37.58	42.63	38.88	38.16	40.36
Cocoa beans, N.Y. ($/lb.)	0.69	0.72	0.47	0.59	0.43	0.42	0.38	0.38	0.38	0.35

Information contacts: Jenny Gonzales (202) 694-5296, Mae Dean Johnson (202) 694-5299.

Table 25—Trade Balance

	Fiscal Year			1999						2000
	1998	1999	2000 P	Jan	Aug	Sep	Oct	Nov	Dec	Jan
	$ million									
Exports										
Agricultural	53,730	49,102	49,500	3,891	3,949	3,931	4,520	4,629	4,405	4,211
Nonagricultural	585,826	586,652	--	44,557	49,349	50,418	52,813	51,725	54,397	48,013
Total [1]	639,556	635,754	--	48,448	53,298	54,349	57,333	56,354	58,802	52,224
Imports										
Agricultural	37,007	37,447	38,000	3,098	2,990	2,883	3,089	3,185	3,367	3,185
Nonagricultural	858,893	938,811	--	68,193	85,723	86,377	90,658	89,343	87,479	83,220
Total [2]	895,900	976,258	--	71,291	88,713	89,260	93,747	92,528	90,846	86,405
Trade Balance										
Agricultural	16,723	11,655	11,500	793	959	1,048	1,431	1,444	1,038	1,026
Nonagricultural	-273,067	-352,159	--	-23,636	-36,374	-35,959	-37,845	-37,618	-33,082	-35,207
Total	-256,344	-340,504	--	-22,843	-35,415	-34,911	-36,414	-36,174	-32,044	-34,181

P = Projected. -- = Not available. Fiscal year (Oct. 1-Sep. 30). 1. Domestic exports including Department of Defense shipments (f.a.s. value).
2. Imports for consumption (customs value). *Information contact: Mary Fant (202) 694-5272*

Table 26—Indexes of Real Trade-Weighted Dollar Exchange Rates[1]

	Annual			1999						2000
	1997	1998	1999	Jan	Aug	Sep	Oct	Nov	Dec	Jan
					1995 = 100					
Total U.S. trade	116.3	119.6	118.9	115.3	123.2	123.1	121.1	124.0	125.3	125.5
Agricultural trade										
U.S. markets	109.8	118.6	118.0	113.8	115.4	113.8	113.2	113.3	112.7	113.2
U.S. competitors	111.6	117.9	117.5	115.8	123.6	124.7	123.2	125.5	126.5	126.1
High-value products										
U.S. markets	110.2	117.5	117.3	113.3	113.8	111.8	111.3	111.0	110.4	110.7
U.S. competitors	113.1	117.0	116.6	114.4	123.1	124.1	122.5	125.5	127.0	126.7
Corn										
U.S. markets	115.7	127.1	125.4	117.3	119.4	116.7	116.0	115.6	114.3	115.5
U.S. competitors	109.7	112.9	112.8	111.6	119.2	119.8	118.7	120.9	121.7	121.4
Soybeans										
U.S. markets	115.2	124.9	123.1	116.9	121.3	120.3	121.7	121.9	124.5	124.9
U.S. competitors	101.9	106.4	112.0	118.6	132.2	116.2	115.5	115.3	115.5	115.8
Wheat										
U.S. markets	103.9	111.3	111.4	110.5	113.8	113.1	112.7	112.6	112.0	112.4
U.S. competitors	110.5	117.3	117.8	116.8	121.1	121.3	120.2	122.2	123.2	122.0
Vegetables										
U.S. markets	107.2	115.4	115.7	113.3	113.0	111.5	111.2	110.9	110.6	110.2
U.S. competitors	111.9	115.1	114.0	111.4	118.8	119.6	118.2	120.7	122.0	122.0
Red meats										
U.S. markets	117.7	128.5	126.9	117.7	117.7	113.9	113.1	112.3	110.7	112.2
U.S. competitors	112.9	118.4	118.4	116.6	124.1	124.9	123.6	126.3	127.6	127.0
Fruits & fruit juices										
U.S. markets	110.8	118.6	118.5	114.9	116.3	114.5	113.8	113.9	113.5	113.7
U.S. competitors	109.4	114.2	114.6	113.2	122.8	124.1	123.1	125.4	126.2	125.6
Cotton										
U.S. markets	110.0	132.3	128.5	120.7	122.3	122.7	120.9	119.8	118.3	118.9
U.S. competitors	100.0	103.0	103.2	102.2	107.2	107.8	107.3	108.4	108.9	108.4
Poultry										
U.S. markets	95.4	101.5	104.5	108.6	107.2	106.9	106.9	106.5	106.1	106.5
U.S. competitors	113.2	117.6	117.7	117.0	128.2	129.9	128.6	130.8	131.4	131.0

1. Real indexes adjust nominal exchange rates to avoid the distortion caused by different levels of inflation among countries. A higher value means the dollar has appreciated. The "total U.S. trade" index uses the Federal Reserve Board index of trade-weighted value of the U.S. dollar against 10 major countries. Weights are based on relative importance of major U.S. customers and competitors in world markets. Indexes are subject to revision for up to one year due to delayed reporting by some countries. High-value products conform to FAS's definition for consumer-oriented agricultural products. Data are available at http://mann77.mannlib.cornell.edu/data-sets/international/88021/. *Information contact: Mathew Shane (202) 694-5282*

Source: Nominal exchange rates are obtained from the IMF International Financial Statisitics. Exchange rates for the EU-11 are obtained from the Board of Governors of the Federal Reserve Board.

Table 27—U.S. Agricultural Exports & Imports

	Fiscal Year			Jan		Fiscal Year			Jan	
	1998	1999	2000 P	1999	2000	1998	1999	2000 P	1999	2000
	1,000 units					*$ million*				
Exports										
Animals, live	--	--	--	--	--	538	509	--	26	63
Meats and preps., excl. poultry (mt) [1]	2,064	2,061	1,700	156	227	4,507	4,460	4,800	329	479
Dairy products	--	--	--	--	--	925	897	900	62	65
Poultry meats (mt)	2,663	2,377	2,600	179	239	2,347	1,743	1,800	128	149
Fats, oils, and greases (mt)	1,365	1,395	1,400	110	75	655	561	--	47	30
Hides and skins, incl. furskins	--	--	--	--	--	1,358	1,108	1,100	96	108
Cattle hides, whole (no.)	18,992	17,845	--	1,467	1,630	969	844	--	73	87
Mink pelts (no.)	2,990	4,172	--	321	248	83	98	--	6	5
Grains and feeds (mt) [2]	87,289	104,576	--	7,302	8,078	13,961	14,272	13,400	1,097	1,094
Wheat (mt) [3]	25,791	28,806	26,500	1,986	1,953	3,759	3,648	3,600	280	235
Wheat flour (mt)	465	958	1,000	49	58	117	177	--	19	9
Rice (mt)	3,310	3,076	3,100	294	348	1,132	1,010	900	110	101
Feed grains, incl. products (mt) [4]	44,564	58,398	54,100	3,821	4,737	5,187	5,821	5,000	388	461
Feeds and fodders (mt)	11,704	11,800	11,600	1,029	893	2,421	2,252	2,300	198	187
Other grain products (mt)	1,455	1,538	--	123	90	1,345	1,363	--	102	102
Fruits, nuts, and preps. (mt)	3,633	3,439	--	276	297	3,977	3,805	4,600	277	274
Fruit juices, incl. froz. (1,000 hectoliters)	10,658	12,317	--	839	788	653	735	--	50	48
Vegetables and preps.	--	--	--	--	--	4,168	4,245	2,800	339	336
Tobacco, unmanufactured (mt)	208	205	200	19	17	1,448	1,376	1,300	114	115
Cotton, excl. linters (mt) [5]	1,552	884	1,400	34	143	2,517	1,309	1,700	59	167
Seeds (mt)	816	579	--	59	58	827	800	900	103	96
Sugar, cane or beet (mt)	123	158	--	15	9	48	56	--	5	3
Oilseeds and products (mt)	36,074	33,569	34,700	3,207	3,781	10,984	8,606	8,500	807	841
Oilseeds (mt)	--	--	--	--	--	--	--	--	--	--
Soybeans (mt)	23,394	22,974	24,400	2,295	2,830	6,117	4,748	4,800	501	535
Protein meal (mt)	8,666	6,726	--	604	697	1,975	1,101	--	103	123
Vegetable oils (mt)	3,049	2,642	--	221	193	2,191	1,815	--	152	122
Essential oils (mt)	46	47	--	4	4	533	507	--	40	37
Other	--	--	--	--	--	4,284	4,112	--	311	306
Total	--	--	--	--	--	53,730	49,102	49,500	3,891	4,211
Imports										
Animals, live	--	--	--	--	--	1,670	1,439	1,500	95	107
Meats and preps., excl. poultry (mt)	1,230	1,398	1,600	104	126	2,718	3,088	3,300	220	283
Beef and veal (mt)	857	943	--	70	84	1,761	2,047	--	148	187
Pork (mt)	271	337	--	25	32	686	721	--	49	70
Dairy products	--	--	--	--	--	1,368	1,572	1,500	109	125
Poultry and products	--	--	--	--	--	207	201	--	16	18
Fats, oils, and greases (mt)	80	90	--	7	9	59	63	--	5	7
Hides and skins, incl. furskins (mt)	--	--	--	--	--	184	146	--	20	23
Wool, unmanufactured (mt)	45	29	--	4	3	151	75	--	10	8
Grains and feeds	--	--	--	--	--	2,919	2,943	2,800	218	227
Fruits, nuts, and preps., excl. juices (mt) [6]	7,581	8,171	8,200	684	752	3,982	4,619	5,600	419	426
Bananas and plantains (mt)	4,175	4,418	4,300	342	373	1,214	1,212	1,200	92	93
Fruit juices (1,000 hectoliters)	26,577	31,655	33,000	2,965	2,819	669	772	--	73	69
Vegetables and preps.	--	--	--	--	--	4,249	4,527	4,900	486	453
Tobacco, unmanufactured (mt)	241	217	200	25	15	822	742	600	90	47
Cotton, unmanufactured (mt)	10	144	--	3	2	11	150	--	3	3
Seeds (mt)	257	357	--	18	55	422	457	--	32	36
Nursery stock and cut flowers	--	--	--	--	--	1,082	1,076	1,100	85	103
Sugar, cane or beet (mt)	2,170	1,692	--	157	46	758	606	--	53	14
Oilseeds and products (mt)	4,314	3,899	3,600	358	311	2,243	2,022	1,900	175	153
Oilseeds (mt)	1,028	1,000	--	90	54	371	326	--	29	22
Protein meal (mt)	1,277	1,131	--	108	110	188	147	--	14	13
Vegetable oils (mt)	2,010	1,769	--	160	147	1,684	1,549	--	132	118
Beverages, excl. fruit juices (1,000 hectoliters)	--	--	--	--	--	3,705	4,258	--	243	287
Coffee, tea, cocoa, spices (mt)	2,369	2,520	--	236	269	6,056	5,306	--	502	501
Coffee, incl. products (mt)	1,155	1,294	1,400	110	132	3,587	2,967	2,700	267	292
Cocoa beans and products (mt)	875	865	800	100	111	1,701	1,531	1,500	179	141
Rubber and allied gums (mt)	1,162	1,148	1,200	94	131	1,027	739	700	62	85
Other	--	--	--	--	--	2,703	2,645	--	183	209
Total	--	--	--	--	--	37,007	37,449	38,000	3,098	3,185

P=Projection. -- = Not available. Projections are fiscal years (October 1 through September 30) and are from Outlook for U.S. Agricultural Exports. 1998 and 1999 data are from *Foreign Agricultural Trade of the U.S* . 1. Projection includes beef, pork, and variety meat. 2. Projection includes pulses. 3. Value projection includes wheat flour. 4. Projection excludes grain products. 5. Projection includes linters. 6. Value projection includes juice.

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Table 28—U.S. Agricultural Exports by Region

	Fiscal year			1999						2000
	1998	1999	2000 F	Jan	Aug	Sep	Oct	Nov	Dec	Jan
Region & country				$ million						
Western Europe	8,859	7,498	7,400	748	592	494	617	728	656	698
European Union[1]	8,522	6,928	6,900	728	404	398	600	706	637	654
Belgium-Luxembourg	666	602	--	47	38	39	51	68	43	48
France	536	380	--	45	22	20	30	46	52	29
Germany	1,294	1,045	--	107	57	61	78	106	71	89
Italy	729	573	--	59	36	22	36	60	50	77
Netherlands	1,792	1,575	--	185	74	92	132	179	148	150
United Kingdom	1,300	1,123	--	97	84	80	106	105	98	67
Portugal	186	131	--	24	10	9	12	10	22	17
Spain, incl. Canary Islands	1,132	772	--	102	37	31	83	71	101	106
Other Western Europe	336	570	500	19	188	96	17	22	19	44
Switzerland	236	456	--	15	171	88	8	13	12	38
Eastern Europe	320	190	200	18	9	9	17	15	13	9
Poland	139	73	--	8	5	5	3	4	4	2
Former Yugoslavia	97	47	--	6	2	2	10	8	2	3
Romania	31	18	--	0	0	0	1	1	1	0
Newly Independent States	1,456	801	900	40	102	88	97	68	59	136
Russia	1,103	461	500	20	71	48	66	24	27	114
Asia[2]	21,992	20,412	18,200	1,632	1,648	1,663	1,858	1,920	1,788	1,772
West Asia (Mideast)	2,286	1,977	2,200	118	162	127	241	229	193	170
Turkey	658	448	600	22	19	13	65	47	77	74
Iraq	131	9	--	--	--	--	--	--	--	--
Israel, incl. Gaza and W. Bank	389	417	--	27	24	29	35	45	34	18
Saudi Arabia	535	468	500	25	43	30	59	46	29	33
South Asia	626	500	500	43	32	47	58	53	30	22
Bangladesh	114	165	--	22	15	21	6	17	4	3
India	163	190	--	13	8	17	10	11	18	17
Pakistan	275	89	--	7	2	1	37	19	1	1
China	1,514	1,002	900	59	73	150	98	109	104	98
Japan	9,469	8,931	9,000	789	698	704	741	816	717	802
Southeast Asia	2,288	2,204	2,100	197	195	174	237	224	241	200
Indonesia	529	492	500	39	41	36	56	60	69	41
Philippines	751	730	700	50	69	68	67	71	83	65
Other East Asia	5,808	5,799	5,700	427	487	461	482	489	504	482
Korea, Rep.	2,258	2,479	2,600	203	220	191	213	197	206	228
Hong Kong	1,568	1,264	1,200	86	97	114	112	115	126	87
Taiwan	1,975	2,046	1,900	138	169	156	157	176	168	165
Africa	2,174	2,108	2,200	169	171	158	206	152	204	162
North Africa	1,475	1,419	1,500	120	114	99	150	94	148	117
Morocco	139	161	--	4	17	7	12	15	5	9
Algeria	281	220	--	23	30	19	8	29	21	21
Egypt	939	957	1,000	90	61	68	124	49	113	84
Sub-Sahara	699	689	700	49	56	59	57	57	56	45
Nigeria	140	176	--	13	17	17	13	11	10	16
S. Africa	193	165	--	13	13	13	20	15	25	14
Latin America and Caribbean	11,362	10,501	10,700	726	799	851	955	955	988	800
Brazil	566	369	400	25	19	20	18	19	18	23
Caribbean Islands	1,487	1,453	--	130	113	106	146	147	146	103
Central America	1,137	1,209	--	83	87	82	97	99	113	79
Colombia	606	467	--	27	32	28	36	45	30	40
Mexico	5,956	5,675	5,900	351	449	521	566	526	599	447
Peru	314	347	--	22	23	24	19	25	18	31
Venezuela	516	457	400	37	33	29	31	43	27	25
Canada	7,022	6,957	7,100	517	556	592	657	630	606	595
Oceania	545	499	500	42	50	36	47	39	44	40
Total	53,730	49,102	49,500	3,891	3,949	3,931	4,520	4,629	4,405	4,211

F = Forecast. -- = Not available. Based on fiscal year beginning October 1 and ending September 30. 1. Austria, Finland, and Sweden are included in the European Union. 2. Asia forecasts exclude West Asia (Mideast). NOTE: Adjusted for transhipments through Canada for 1997 and 1998 through December 1998, but transhipments are not distributed by country as previously for 1999. *Information contact: Mary Fant (202) 694-5272*

Farm Income

Table 29—Value Added to the U.S. Economy by the Agricultural Sector

		1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
		$ billion									
	Final crop output	81.0	89.0	82.3	100.4	95.8	115.4	112.1	102.0	95.0	93.5
	Food grains	7.3	8.5	8.2	9.5	10.4	10.7	10.1	8.7	7.4	6.7
	Feed crops	19.3	20.1	20.2	20.3	24.5	27.2	27.1	22.9	20.6	19.5
	Cotton	5.2	5.2	5.2	6.7	6.9	7.0	6.3	6.0	5.0	5.3
	Oil crops	12.7	13.3	13.2	14.7	15.5	16.3	19.7	17.2	14.6	14.3
	Tobacco	2.9	3.0	2.9	2.7	2.5	2.8	2.9	3.0	2.2	1.8
	Fruits and tree nuts	9.9	10.2	10.3	10.3	11.1	11.9	13.1	11.7	12.5	12.6
	Vegetables	11.6	11.8	13.7	14.2	15.0	14.4	15.0	15.3	15.1	15.7
	All other crops	13.1	13.7	13.7	14.7	15.0	15.8	16.9	17.3	17.8	17.5
	Home consumption	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Value of inventory adjustment [1]	-1.2	3.2	-5.3	7.2	-5.3	9.1	0.9	-0.4	-0.2	0.0
	Final animal output	87.3	87.1	92.0	89.7	87.7	92.1	96.5	94.3	96.0	96.8
	Meat animals	50.1	47.7	51.0	46.7	44.9	44.2	49.7	43.6	46.9	47.7
	Dairy products	18.0	19.7	19.3	20.0	19.9	22.8	20.9	24.3	23.4	21.4
	Poultry and eggs	15.2	15.5	17.3	18.5	19.1	22.4	22.2	22.8	22.8	23.6
	Miscellaneous livestock	2.5	2.6	2.9	3.1	3.3	3.6	3.7	3.8	3.8	3.8
	Home consumption	0.5	0.5	0.4	0.4	0.4	0.3	0.4	0.3	0.4	0.4
	Value of inventory adjustment [1]	1.0	1.0	1.1	1.1	0.2	-1.1	-0.4	-0.6	-1.2	-0.1
	Services and forestry	15.4	15.3	17.1	18.1	19.9	20.8	22.5	24.6	25.4	25.2
	Machine hire and customwork	1.8	1.8	1.9	2.1	1.9	2.1	2.6	2.3	2.3	2.4
	Forest products sold	1.8	2.2	2.5	2.7	2.8	2.6	2.9	2.8	2.9	2.9
	Other farm income	4.7	4.1	4.6	4.3	5.8	6.2	6.9	8.7	9.2	8.8
	Gross imputed rental value of farm dwellings	7.2	7.2	8.1	9.0	9.4	9.9	10.1	10.8	11.0	11.1
	Final agricultural sector output [2]	183.7	191.4	191.4	208.2	203.5	228.4	231.2	220.8	216.4	215.5
Minus	Intermediate consumption outlays:	94.6	93.4	100.7	104.9	109.7	113.2	120.9	118.7	119.5	121.3
	Farm origin	38.6	38.6	41.3	41.3	41.8	42.7	46.9	44.9	45.2	44.6
	Feed purchased	19.3	20.1	21.4	22.6	23.8	25.2	26.3	25.0	24.1	23.8
	Livestock and poultry purchased	14.1	13.6	14.7	13.3	12.5	11.3	13.8	12.7	13.9	13.5
	Seed purchased	5.1	4.9	5.2	5.4	5.5	6.2	6.7	7.2	7.2	7.2
	Manufactured inputs	23.2	22.7	23.1	24.4	26.2	28.6	29.2	28.3	29.2	30.2
	Fertilizers and lime	8.7	8.3	8.4	9.2	10.0	10.9	10.9	10.7	10.4	10.5
	Pesticides	6.3	6.5	6.7	7.2	7.7	8.5	9.0	9.1	9.1	9.1
	Petroleum fuel and oils	5.6	5.3	5.3	5.3	5.4	6.0	6.2	5.6	6.4	7.4
	Electricity	2.6	2.6	2.7	2.7	3.0	3.2	3.0	2.9	3.3	3.2
	Other intermediate expenses	32.8	32.1	36.2	39.2	41.7	41.8	44.9	45.5	45.1	46.5
	Repair and maintenance of capital items	8.6	8.5	9.2	9.1	9.5	10.3	10.4	10.4	10.3	10.5
	Machine hire and customwork	3.5	3.8	4.4	4.8	4.8	4.7	4.9	5.5	5.5	5.7
	Marketing, storage, and transportation	4.7	4.5	5.6	6.8	7.2	6.9	7.1	6.7	6.8	7.1
	Contract labor	1.6	1.7	1.8	1.8	2.0	2.1	2.6	2.4	2.5	2.5
	Miscellaneous expenses	14.3	13.6	15.2	16.7	18.3	17.8	19.8	20.5	20.0	20.7
Plus	Net government transactions:	2.1	2.7	6.9	1.1	0.2	0.2	0.2	4.6	15.3	9.6
	+ Direct government payments	8.2	9.2	13.4	7.9	7.3	7.3	7.5	12.2	22.7	17.2
	- Motor vehicle registration and licensing fees	0.3	0.4	0.4	0.4	0.5	0.4	0.5	0.5	0.5	0.5
	- Property taxes	5.8	6.1	6.2	6.3	6.6	6.7	6.9	7.2	6.9	7.0
	Gross value added	91.2	100.6	97.5	104.5	94.0	115.4	110.4	106.7	112.2	103.8
Minus	Capital consumption	18.2	18.3	18.4	18.6	18.9	19.2	19.3	19.4	19.2	18.9
	Net value added [2]	73.0	82.3	79.2	85.8	75.1	96.2	91.1	87.2	92.9	84.9
Minus	Factor payments:	34.4	34.4	34.6	36.6	37.9	41.3	42.5	43.1	44.9	44.5
	Employee compensation (total hired labor)	12.3	12.3	13.2	13.5	14.3	15.3	16.0	16.9	17.7	17.9
	Net rent received by nonoperator landlords	9.9	11.1	10.7	11.5	11.0	13.0	12.9	12.0	13.6	12.9
	Real estate and non-real estate interest	12.1	11.0	10.6	11.5	12.6	13.0	13.5	14.2	13.5	13.7
	Net farm income [2]	38.7	47.9	44.5	49.2	37.2	54.9	48.6	44.1	48.1	40.4

Values in last two columns are preliminary or forecast. 1. A positive value of inventory change represents current-year production not sold by December 1. A negative value is an offset to production from prior years included in current-year sales. 2. Final sector output is the gross value of commodities and services produced within a year. Net value added is the sector's contribution to the National economy and is the sum of income from production earned by all factors of production. Net farm income is farm operators' share of income from the sector's production activities. The concept presented is consistent with that employed by the Organization for Economic Cooperation and Development. *Information contact: Roger Strickland (202)694-5592 or rogers@ers.usda.gov*

Table 30—Farm Income Statistics

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
					$ billion					
Cash Income statement:										
1. Cash receipts	167.9	171.3	177.9	181.3	188.1	199.1	207.6	196.8	191.9	189.9
Crops[1]	82.1	85.7	87.4	93.1	101.0	106.2	111.1	102.2	95.1	93.3
Livestock	85.8	85.6	90.4	88.2	87.1	93.0	96.5	94.5	96.9	96.5
2. Direct Government payments	8.2	9.2	13.4	7.9	7.3	7.3	7.5	12.2	22.7	17.2
3. Farm-related income[2]	8.3	8.1	9.0	9.1	10.5	11.0	12.4	13.8	14.4	14.1
4. Gross cash income (1+2+3)	184.3	188.6	200.3	198.2	205.8	217.4	227.5	222.8	229.1	221.1
5. Cash expenses[3]	134.0	133.3	141.0	147.1	153.2	159.9	169.0	167.8	170.0	171.5
6. Net cash income (4-5)	50.4	55.2	59.3	51.1	52.6	57.5	58.5	54.9	59.1	49.7
Farm income statement:										
7. Gross cash income (4)	184.3	188.6	200.3	198.2	205.8	217.4	227.5	222.8	229.1	221.1
8. Noncash income[4]	7.8	7.8	8.7	9.6	9.9	10.3	10.6	11.3	11.5	11.6
9. Value of inventory adjustment	-0.2	4.2	-4.2	8.3	-5.0	8.0	0.5	-1.0	-1.4	-0.1
10. Gross farm income (7+8+9)	191.9	200.5	204.8	216.1	210.7	235.7	238.7	233.1	239.1	232.7
11. Total production expenses	153.3	152.6	160.2	166.8	173.5	180.8	190.0	189.0	191.1	192.3

Values for last 2 years are preliminary or forecast. Numbers in parentheses indicate the combination of items required to calculate an item. Totals may not add due to rounding. 1. Includes commodities placed under CCC loans and profits made on loans redeemed. 2. Income from custom labor, machine hire, recreational activities, forest product sales, and other farm sources. 3. Excludes depreciation and perquisites to hired labor. Excludes farm operator dwellings. 4. Value of farm products consumed on farms where produced plus the imputed rental value of farm dwellings.

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Table 31—Average Income to Farm Operator Households[1]

	1992	1993	1994	1995	1996	1997	1998	1999	2000
					$ per farm				
Net cash farm business income[2]	11,320	11,248	11,389	11,218	13,502	12,676	14,357	--	--
Less depreciation[3]	5,187	6,219	6,466	6,795	6,906	6,578	7,409	--	--
Less wages paid to operator[4]	216	454	425	522	531	513	637	--	--
Less farmland rental income[5]	360	534	701	769	672	568	543	--	--
Less adjusted farm business income due to other household(s)[6]	961	872	815	649	1,094	1,505	1,332	--	--
					$ per farm operator household				
Equals adjusted farm business income	4,596	3,168	2,981	2,484	4,300	3,513	4,436	--	--
Plus wages paid to operator	216	454	425	522	531	513	637	--	--
Plus net income from farmland rental[7]	360	--	--	1,053	1,178	945	868	--	--
Equals farm self-employment income	5,172	3,623	3,407	4,059	6,009	4,971	5,941	--	--
Plus other farm-related earnings[8]	2,008	1,192	970	661	1,898	1,234	1,165	--	--
Equals earnings of the operator household from farming activities	7,180	4,815	4,376	4,720	7,906	6,205	7,106	6,469	2,975
Plus earnings of the operator household from off-farm sources[9]	35,731	35,408	38,092	39,671	42,455	46,358	52,628	54,443	56,375
Equals average farm operator household income	42,911	40,223	42,469	44,392	50,361	52,562	59,734	60,912	59,350
					$ per U.S. household				
U.S. average household income[10]	38,840	41,428	43,133	44,938	47,123	49,692	51,855	--	--
					Percent				
Average farm operator household income as percent of U.S. average household income	110.5	97.1	98.5	98.8	106.9	105.8	115.2	--	--
Average operator household earnings from farming activities as percent of average operator household income	16.7	12.0	10.3	10.6	15.7	11.8	11.9	--	--

-- = Not available. F = forecast. 1.This table derives farm operator household income estimates from the Agricultural Resource Management Study (ARMS) that are consistent with Current Population Survey (CPS) methodology. The CPS, conducted by the Bureau of the Census, is the source of official U.S. household income statistics. The CPS defines income to include any income received as cash. The CPS definition departs from a strictly cash concept by including depreciation as an expense that farm operators and other self-employed people subtract from gross receipts when reporting net cash income. 2. A component of farm-sector income. Excludes income of contractors and landlords as well as the income of farms organized as nonfamily corporations or cooperatives, and farms run by a hired manager. Includes income of farms organized as proprietorships, partnerships, and family corporations. 3. Consistent with the CPS definition of self-employed income, reported depreciation expenses are subtracted from net cash farm income. The ARMS collects data on farm business depreciation used for tax purposes.
4. Wages paid to the operator are excluded because they are not shared among other households that have claims on farm business income. These wages are added to the operator household's adjusted farm business income to obtain farm self-employment income. 5. Gross rental income is excluded because net rental income from farm operation is added below to income received by the household. 6. More than one household may have a claim on the income of a farm business. On average, 1.1 households share the income of a farm business. 7. Includes net rental income from the farm business. Also includes net rental income from farmland held by household members that is not part of the farm business. In 1991 and 1992, gross rental income from the farm business was used because net rental income data were not collected. In 1993 and 1994, net rental income data were collected as part of off-farm income. 1994, net rental income data were collected as part of off-farm income. 8. Wages paid to other operator household members by the farm business, and net income from a farm business other than the one surveyed. In 1996, also includes the value of commodities provided to household members for farm work. 9. Wages, salaries, net income from nonfarm businesses, interest, dividends, transfer payments, etc. In 1993 and 1994, also includes net rental income from farmland. 10. From the CPS. Sources: U.S. Department of Agriculture, Economic Research Service, 1992, 1993, 1994, and 1995 Farm Costs and Returns Survey (FCRS), and 1996 and 1997 Agricultural Resource Management Study for farm operator household data. U.S. Department of Commerce, Bureau of the Census Current Population Survey (PCS), for average household income.

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Table 32—Balance Sheet of the U.S. Farming Sector

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
					$ billion					
Farm assets	844.2	868.3	910.2	935.5	966.7	1,003.9	1,051.6	1,064.3	1,067.2	1,072.8
Real estate	624.8	640.8	677.6	704.1	740.5	769.5	808.4	822.8	831.1	835.2
Livestock and poultry[1]	68.1	71.0	72.8	67.9	57.8	60.3	67.1	62.0	60.8	60.7
Machinery and motor vehicles	85.9	85.4	86.5	87.5	88.5	88.9	89.0	88.6	86.9	86.3
Crops stored[2,3]	22.2	24.2	23.3	23.3	27.4	31.7	32.2	30.1	30.0	30.0
Purchased inputs	2.6	3.9	3.8	5.0	3.4	4.4	5.1	5.3	5.5	5.6
Financial assets	40.5	43.1	46.3	47.6	49.1	49.0	49.7	55.4	53.0	55.0
Total farm debt	139.2	139.1	142.0	146.8	150.8	156.1	165.4	172.9	172.8	172.5
Real estate debt[3]	74.9	75.4	76.0	77.7	79.3	81.7	85.4	89.6	90.3	90.8
Non-real estate debt[4]	64.3	63.6	65.9	69.1	71.5	74.4	80.1	83.2	82.5	81.7
Total farm equity	705.0	729.3	768.3	788.7	815.9	847.8	886.2	891.4	894.4	900.3
					Percent					
Selected ratios										
Debt to equity	19.8	19.1	18.5	18.6	18.5	18.4	18.7	19.4	19.3	19.2
Debt to assets	16.5	16.0	15.6	15.7	15.6	15.6	15.7	16.2	16.2	16.1

Values in the last two columns are preliminary or forecast. 1. As of December 31. 2. Non-CCC crops held on farms plus value above loan rates for crops held under CCC. 3. Includes CCC storage and drying facilities loans, but excludes debt on operator dwellings. 4. Excludes debt for nonfarm purposes. *Information contact: Ken Erickson (202) 694-5565 or erickson@ers.usda.gov*

Table 33—Cash Receipts from Farming

	Annual			1998	1999					
	1997	1998	1999P	Dec	Jul	Aug	Sep	Oct	Nov	Dec
					$ million					
Commodity sales[1]	207,611	196,761	187,559	18,056	14,452	15,667	17,002	20,849	18,002	17,132
Livestock and products	96,535	94,539	95,169	7,487	8,045	8,584	8,389	8,344	9,113	7,480
Meat animals	49,682	43,604	46,917	2,895	3,419	4,573	4,249	4,425	4,552	3,752
Dairy products	20,940	24,312	23,280	2,453	1,838	2,022	2,074	2,051	1,920	1,758
Poultry and eggs	22,234	22,806	21,130	1,970	1,807	1,777	1,685	1,691	1,883	1,799
Other	3,679	3,816	3,842	168	981	212	380	177	759	171
Crops	111,076	102,222	92,391	10,570	6,407	7,083	8,613	12,505	8,889	9,652
Food grains	10,137	8,734	7,310	664	989	751	833	689	344	496
Feed crops	27,101	22,927	19,771	2,580	1,265	1,519	1,496	2,399	1,778	2,274
Cotton (lint and seed)	6,346	6,013	4,693	1,085	88	158	209	857	626	1,375
Tobacco	2,874	2,989	2,308	759	8	340	323	416	149	547
Oil-bearing crops	19,673	17,198	13,706	1,610	629	776	1,301	3,541	1,233	1,140
Vegetables and melons	14,961	15,337	15,114	901	1,413	1,596	1,535	1,452	854	862
Fruits and tree nuts	13,074	11,727	12,186	1,137	1,034	983	1,364	1,513	1,522	1,139
Other	16,909	17,297	17,302	1,834	982	959	1,553	1,638	2,383	1,818
Government payments	7,495	12,209	20,595	1,389	678	1,033	546	5,707	4,122	2,234
Total	215,107	208,970	208,154	19,445	15,130	16,700	17,548	26,556	22,125	19,366

Annual values for the most recent year are preliminary. 1. Sales of farm products include receipts from commodities placed under nonrecourse CCC loans, plus additional gains realized on redemptions during the period. *Information contacts: Larry Traub (202) 694-5593 or ltraub@ers.usda.gov*
To receive current monthly cash receipts via e-mail contact Larry Traub.

Table 34—Cash Receipts from Farm Marketings, by State

Region and State	Livestock and products 1998	Livestock and products 1999P	Livestock and products Nov 1999	Livestock and products Dec 1999	Crops[1] 1998	Crops[1] 1999P	Crops[1] Nov 1999	Crops[1] Dec 1999	Total[1] 1998	Total[1] 1999P	Total[1] Nov 1999	Total[1] Dec 1999
					$ million							
North Atlantic												
Maine	282	275	24	22	224	230	16	18	506	505	41	40
New Hampshire	69	69	7	6	82	81	7	5	151	150	14	11
Vermont	472	465	39	36	84	78	9	4	557	543	49	40
Massachusetts	112	112	10	9	395	373	63	37	507	486	73	46
Rhode Island	9	9	1	1	56	55	4	8	65	64	5	8
Connecticut	228	222	25	18	281	264	19	35	509	486	44	53
New York	2,092	2,022	188	147	1,054	1,001	82	86	3,146	3,023	270	233
New Jersey	178	178	29	11	650	617	58	36	828	796	86	46
Pennsylvania	2,914	2,893	260	222	1,261	1,189	104	103	4,175	4,082	365	325
North Central												
Ohio	1,848	1,848	185	145	3,124	2,635	187	197	4,973	4,483	372	341
Indiana	1,639	1,494	154	130	3,245	2,800	189	210	4,885	4,294	343	340
Illinois	1,575	1,456	135	114	6,167	5,226	301	464	7,742	6,682	436	578
Michigan	1,323	1,303	126	94	2,158	2,055	242	220	3,480	3,358	368	314
Wisconsin	4,492	3,990	384	344	1,701	1,617	273	173	6,193	5,606	657	517
Minnesota	3,755	3,491	315	278	3,925	3,586	451	543	7,680	7,077	765	821
Iowa	4,778	4,831	436	416	6,217	5,010	373	569	10,994	9,841	809	985
Missouri	2,420	2,480	234	223	2,262	1,767	160	192	4,682	4,247	395	415
North Dakota	549	661	53	50	2,455	2,204	294	255	3,004	2,865	347	305
South Dakota	1,557	1,779	182	142	1,951	1,735	181	141	3,508	3,513	363	283
Nebraska	5,124	5,617	568	428	3,725	3,113	322	354	8,848	8,730	890	782
Kansas	4,537	4,876	473	387	3,247	2,579	298	275	7,784	7,454	771	661
Southern												
Delaware	609	557	48	50	164	151	13	6	774	708	61	56
Maryland	949	906	86	76	571	541	54	36	1,520	1,447	140	112
Virginia	1,561	1,567	161	123	768	684	71	72	2,328	2,251	232	196
West Virginia	336	336	31	24	69	54	6	4	405	390	37	28
North Carolina	3,917	3,591	350	321	3,247	2,758	258	196	7,164	6,350	607	517
South Carolina	763	731	68	56	748	631	45	50	1,511	1,362	113	106
Georgia	3,408	3,183	253	256	2,047	1,794	137	208	5,454	4,976	390	464
Florida	1,407	1,547	155	115	5,355	5,390	305	505	6,762	6,937	460	621
Kentucky	2,134	2,255	408	134	1,787	1,385	114	383	3,920	3,640	522	517
Tennessee	1,038	1,128	120	88	1,177	977	84	200	2,216	2,104	205	288
Alabama	2,587	2,428	198	201	696	657	74	79	3,283	3,085	272	280
Mississippi	2,169	2,038	163	172	1,285	1,025	89	178	3,454	3,063	252	350
Arkansas	3,250	3,077	252	269	2,172	1,867	166	200	5,422	4,944	418	469
Louisiana	645	722	57	52	1,245	1,171	178	272	1,891	1,893	235	324
Oklahoma	2,838	2,809	322	263	1,062	869	61	67	3,900	3,678	384	330
Texas	8,220	8,724	832	622	4,986	4,511	434	666	13,206	13,234	1,266	1,288
Western												
Montana	865	989	111	69	934	794	89	87	1,799	1,783	200	156
Idaho	1,585	1,677	146	126	1,735	1,975	257	200	3,320	3,652	403	326
Wyoming	681	836	97	76	170	160	43	25	850	996	141	101
Colorado	2,857	3,102	295	221	1,453	1,389	138	137	4,310	4,492	433	358
New Mexico	1,437	1,531	141	115	513	531	63	55	1,950	2,062	204	169
Arizona	943	1,024	87	81	1,425	1,230	101	142	2,368	2,254	187	223
Utah	736	731	69	65	245	235	20	18	981	966	89	83
Nevada	194	194	15	13	143	138	14	11	337	332	29	24
Washington	1,730	1,685	156	136	3,424	3,335	330	257	5,155	5,019	485	393
Oregon	762	818	90	65	2,330	2,166	246	138	3,092	2,984	336	202
California	6,845	6,794	564	459	17,771	17,322	1,828	1,502	24,616	24,116	2,392	1,960
Alaska	27	27	2	2	20	20	2	1	47	47	4	4
Hawaii	92	92	8	7	418	415	36	35	510	507	44	42
U.S.	94,539	95,169	9,113	7,480	102,222	92,391	8,889	9,652	196,761	187,559	18,002	17,132

Annual values for the most recent year are preliminary. Estimates as of end of current month. Totals may not add because of rounding. 1. Sales of farm products include receipts from commodities placed under nonrecourse CCC loans, plus additional gains realized on redemptions during the period.
Information contact: Larry Traub (202) 694-5593 or ltraub@ers.usda.gov. To receive current monthly cash receipts via e-mail, contact Larry Traub.

Table 35—CCC Net Outlays by Commodity & Function

	Fiscal year									
	1992	1993	1994	1995	1996	1997	1998	1999	2000 E	2001 E
	$ million									
Commodity/Program										
Feed grains:										
Corn	2,105	5,143	625	2,090	2,021	2,587	2,873	5,402	8,744	4,444
Grain sorghum	190	410	130	153	261	284	296	502	706	330
Barley	174	186	202	129	114	109	168	224	286	110
Oats	32	16	5	19	8	8	17	41	38	37
Corn and oat products	9	10	10	1	0	0	0	0	0	0
Total feed grains	2,510	5,765	972	2,392	2,404	2,988	3,354	6,169	9,774	4,921
Wheat and products	1,719	2,185	1,729	803	1,491	1,332	2,187	3,435	4,095	1,737
Rice	715	887	836	814	499	459	491	911	1,170	625
Upland cotton	1,443	2,239	1,539	99	685	561	1,132	1,882	2,697	1,300
Tobacco	29	235	693	-298	-496	-156	376	113	297	-314
Dairy	232	253	158	4	-98	67	291	480	356	108
Soybeans	-29	109	-183	77	-65	5	139	1,289	2,809	3,355
Peanuts	41	-13	37	120	100	6	-11	21	35	-1
Sugar	-19	-35	-24	-3	-63	-34	-30	-51	0	1
Honey	17	22	0	-9	-14	-2	0	2	1	-4
Wool and mohair	191	179	211	108	55	0	0	10	2	-13
Operating expense[1]	6	6	6	6	6	6	5	4	61	5
Interest expenditure	532	129	-17	-1	140	-111	76	210	627	704
Export programs[2]	1,459	2,193	1,950	1,361	-422	125	212	165	613	694
1988/99 Disaster/tree/ livestock assistance	1,054	944	2,566	660	95	130	3	2,241	1,552	2
Conservation Reserve Program	0	0	0	0	2	1,671	1,693	1,462	1,610	1,690
Other conservation programs	0	0	0	0	7	105	197	292	381	305
Other	-162	949	-137	-103	320	104	28	588	881	252
Total	9,738	16,047	10,336	6,030	4,646	7,256	10,143	19,223	26,961	15,367
Function										
Price support loans (net)	584	2,065	527	-119	-951	110	1,128	1,455	1,673	1,079
Cash direct payments:[3]										
Production flexibility contract	0	0	0	0	5,141	6,320	5,672	5,476	5,049	4,057
Market loss assistance	0	0	0	0	0	0	0	3,011	6,062	0
Deficiency	5,491	8,607	4,391	4,008	567	-1,118	-7	-3	0	0
Diversion	0	0	0	0	0	0	0	0	0	0
Dairy termination	2	0	0	0	0	0	0	0	0	0
Loan deficiency	214	387	495	29	0	0	478	3,360	7,222	6,374
Other	140	149	171	97	95	7	416	281	501	355
Conservation Reserve Program	0	0	0	0	2	1,671	1,693	1,435	1,574	1,690
Other conservation programs	0	0	0	0	0	85	156	247	331	252
Noninsured Assistance (NAP)	0	0	0	0	2	52	23	54	75	86
Total direct payments	5,847	9,143	5,057	4,134	5,807	7,017	8,431	13,861	20,814	12,814
1988-99 crop disaster	960	872	2,461	577	14	2	-2	1,913	1,342	0
Emergency livestock/tree/DRAP livestock indemn/forage assist.	94	72	105	83	81	128	5	328	210	2
Purchases (net)	321	525	293	-51	-249	-60	207	668	332	-107
Producer storage payments	14	9	12	23	0	0	0	0	0	0
Processing, storage, and transportation	185	136	112	72	51	33	38	62	61	54
Export donations ocean transportation	139	352	156	50	69	34	40	323	291	161
Operating expense[1]	6	6	6	6	6	6	5	4	61	5
Interest expenditure	532	129	-17	-1	140	-111	76	210	627	704
Export programs[2]	1,459	2,193	1,950	1,361	-422	125	212	165	613	694
Other	-403	545	-326	-105	100	-28	3	234	937	-39
Total	9,738	16,047	10,336	6,030	4,646	7,256	10,143	19,223	26,961	15,367

E = Estimated in FY 2001 President's Budget which was released on February 7, 2000 based on November 1999 supply and demand estimates. The CCC outlays in 1996-2002 include the impact of the Federal Agriculture Improvement and Reform Act of 1996, which was enacted April 4, 1996. Minus (-) indicates a net receipt (excess of repayments or other receipts over gross outlays of funds).

1. Does not include CCC Transfers to General Sales Manager. 2. Includes Export Guarantee Program, Direct Export Credit Program, CCC Transfers to the General Sales Manager, Market Access (Promotion) Program, starting in FY 1991 and starting in FY 1992 the Export Guarantee Program - Credit Reform, Export Enhancement Program, Dairy Export Incentive Program, and Technical Assistance to Emerging Markets, and starting in FY 2000 Foreign Market Development Cooperative Program and Quality Samples Program. 3. Includes cash payments only. Excludes generic certificates in FY 86-96. *Information contact: Richard Pazdalski'Farm Service Agency-Budget at (202) 720-3675 or Richard_Pazdalski@wdc.fsa.usda.gov.*
Further detail can be found at www.fsa.usda.gov/dam/BUD/bud1.htm

Food Expenditures

Table 36—Food Expenditures

	Annual			1999	2000		Year-to-date cumulative		
	1997	1998	1999	Dec	Jan	Feb	Dec	Jan	Feb
	$ billion								
Sales[1]									
At home[2]	384.9	395.3	411.0	40.7	31.7	31.2	411.0	31.7	62.8
Away from home[3]	309.2	323.6	343.3	30.5	28.0	29.2	343.3	28.0	57.2
	1998 $ billion								
Sales[1]									
At home[2]	392.2	395.3	396.4	39.6	30.7	30.2	396.4	30.7	60.9
Away from home[3]	317.3	323.6	328.0	29.5	26.9	28.2	328.0	26.9	55.1
	Percent change from year earlier ($ billion)								
Sales[1]									
At home[2]	3.4	2.7	4.0	10.4	-2.2	13.7	4.0	-2.2	5.1
Away from home[3]	3.0	4.7	13.8	20.7	16.2	19.7	13.8	16.2	18.0
	Percent change from year earlier (1998 $ billion)								
Sales[1]									
At home[2]	1.0	1.0	4.7	13.3	1.1	17.1	4.7	1.1	8.4
Away from home[3]	0.2	2.0	14.7	24.5	19.9	23.7	14.7	19.9	21.8

-- = Not available. 1. Food only (excludes alcoholic beverages). Not seasonally adjusted. 2. Excludes donations and home production. 3. Excludes donations, child nutrition subsidies, and meals furnished to employees, patients, and inmates. *Information contact: Annette Clauson (202) 694-5389*
Note: This table differs from Personal Consumption Expenditures (PCE), table 2, for several reasons: (1) this series includes only food, excluding alcoholic beverages and pet food which are included in PCE; (2) this series is not seasonally adjusted, whereas PCE is seasonally adjusted at annual rates; (3) this series reports sales only, but PCE includes food produced and consumed on farms and food furnished to employees; (4) this series includes all sales of meals and snacks, while PCE includes only purchases using personal funds, excluding business travel and entertainment. For a more complete discussion of the differences, see "Developing an Integrated Information System for the Food Sector," ERS Agr. Econ. Rpt. No. 575, Aug. 1987.

Transportation

Table 37—Rail Rates; Grain & Fruit-Vegetable Shipments

	Annual			1999						2000
	1997	1998	1999 R	Jan	Aug	Sep	Oct	Nov	Dec	Jan P
Rail freight rate index[1] (Dec. 1984=100)										
All products	112.1	113.4	113.0	112.6	112.7	113.3	113.4	113.3	113.3	114.0
Farm products	120.3	123.9	121.9	121.6	121.4	122.9	124.7	123.1	123.1	122.8
Grain food products	107.6	107.4	99.5	99.2	99.3	100.4	99.3	99.3	100.4	99.5
Grain shipments										
Rail carloadings (1,000 cars)[2]	23.2	22.8	24.4	23.4	26.5	25.9	28.3	24.5	23.8	23.7
Barge shipments (mil. ton)[3,4]	2.6	3.0	3.5	1.3	3.8	2.7	3.8	4.2	3.6	2.3
Fresh fruit and vegetable shipments[5]										
Piggy back (mil. cwt)	1.1	0.9	0.7	0.6	0.8	0.8	0.6	0.8	0.7	0.7
Rail (mil. cwt)	1.7	1.2	1.1	1.4	0.5	0.9	1.3	1.7	1.8	1.3
Truck (mil. cwt)	42.6	42.2	44.3	41.0	42.2	37.5	42.3	43.1	41.9	39.5

P= Preliminary. R = Revised. -- = Not available. 1. Department of Labor, Bureau of Labor Statistics. 2. Weekly average; from Association of American Railroads. 3. Shipments on Illinois and Mississippi waterways, U.S. Corps of Engineers. 4. Annual 1996 is 7-month average. 5. Agricultural Marketing Service, USDA. *Information contact: Jenny Gonzales (202) 694-5296*

Indicators of Farm Productivity

Table 38—Indexes of Farm Production, Input Use, & Productivity[1]

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
					1992 = 100					
Farm output	88	83	89	94	94	100	94	107	101	106
All livestock products	92	93	94	95	98	100	100	108	110	109
Meat animals	95	97	97	96	99	100	100	102	103	100
Dairy products	94	96	95	98	98	100	99	114	115	115
Poultry and eggs	81	83	86	92	96	100	104	110	114	119
All crops	86	75	86	92	92	100	90	106	96	103
Feed crops	84	62	85	88	86	100	76	102	83	98
Food crops	84	76	83	107	82	100	96	97	90	93
Oil crops	88	72	88	87	94	100	85	115	99	107
Sugar	95	91	91	92	96	100	95	106	98	94
Cotton and cottonseed	92	96	75	96	109	100	100	122	110	117
Vegetables and melons	90	81	85	93	97	100	97	113	108	112
Fruit and nuts	95	102	98	97	96	100	107	111	102	102
Farm input[1]	101	100	100	101	102	100	101	102	101	100
Farm labor	101	103	104	102	106	100	96	96	92	100
Farm real estate	100	100	102	101	100	100	98	99	98	99
Durable equipment	120	113	108	105	103	100	97	94	92	89
Energy	102	102	101	100	101	100	100	103	109	104
Fertilizer	106	97	94	97	98	100	111	109	85	89
Pesticides	92	79	93	90	100	100	97	103	94	106
Feed, seed, and purchased livestock	97	96	91	99	99	100	101	102	109	95
Inventories	102	98	93	97	100	100	104	99	108	104
Farm output per unit of input	87	83	90	93	92	100	94	105	100	106
Output per unit of labor										
Farm[2]	87	81	86	92	89	100	98	111	110	106
Nonfarm[3]	95	95	96	96	97	100	100	101	--	--

-- = Not available. Values for latest year preliminary. 1. Includes miscellaneous items not shown separately. 2. Source: Economic Research Service.
3. Source: Bureau of Labor Statistics. *Information contact: John Jones (202) 694-5614*

Food Supply & Use

Table 39—Per Capita Consumption of Major Food Commodities[1]

Commodity	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
					Lbs.					
Red meats[2,3,4]	115.9	112.3	111.9	114.1	112.2	114.7	115.1	112.8	111.0	115.6
Beef	65.4	63.9	63.1	62.8	61.5	63.6	64.4	65.0	63.8	64.9
Veal	1.0	0.9	0.8	0.8	0.8	0.8	0.8	1.0	0.9	0.7
Lamb & mutton	1.0	1.0	1.0	1.0	1.0	0.9	0.9	0.8	0.8	0.9
Pork	48.4	46.4	46.9	49.5	48.9	49.5	49.0	45.9	45.6	49.1
Poultry[2,3,4]	53.9	56.3	58.3	60.8	62.5	63.3	62.9	64.1	64.2	65.0
Chicken	40.9	42.4	44.2	46.7	48.5	49.3	48.8	49.5	50.4	50.8
Turkey	13.1	13.8	14.1	14.1	14.0	14.1	14.1	14.6	13.9	14.2
Fish and shellfish[3]	15.6	15.0	14.8	14.7	14.9	15.1	14.9	14.7	14.5	14.8
Eggs[4]	30.5	30.2	30.1	30.3	30.4	30.6	30.3	30.6	30.7	32.0
Dairy products										
Cheese (excluding cottage)[2,5]	23.8	24.6	25.0	26.0	26.2	26.8	27.3	27.7	28.0	28.4
American	11.0	11.1	11.1	11.3	11.4	11.5	11.8	12.0	12.0	12.2
Italian	8.5	9.0	9.4	10.0	9.8	10.3	10.4	10.8	11.0	11.3
Other cheeses[6]	4.3	4.5	4.6	4.7	5.0	5.0	5.0	5.0	5.0	4.8
Cottage cheese	3.6	3.4	3.3	3.1	2.9	2.8	2.7	2.6	2.7	2.7
Beverage milks[2]	224.2	221.8	221.1	218.3	213.4	213.6	209.8	210.0	206.9	204.5
Fluid whole milk[7]	97.5	90.4	87.3	84.0	80.1	78.8	75.3	74.6	72.7	71.6
Fluid lower fat milk[8]	106.5	108.5	109.9	109.3	106.6	106.0	102.6	101.7	99.9	98.5
Fluid skim milk	20.2	22.9	23.9	25.0	26.7	28.8	31.9	33.7	34.3	34.4
Fluid cream products[9]	7.8	7.6	7.7	8.0	8.0	8.1	8.4	8.7	9.0	9.2
Yogurt (excluding frozen)	4.2	4.0	4.2	4.2	4.3	4.7	5.1	4.8	5.2	5.1
Ice cream	16.1	15.8	16.3	16.3	16.1	16.1	15.7	15.9	16.4	16.6
Lowfat ice cream[10]	8.4	7.7	7.4	7.1	6.9	7.6	7.5	7.6	7.9	8.3
Frozen yogurt	2.0	2.8	3.5	3.1	3.5	3.5	3.5	2.6	2.1	1.9
All dairy products, milk equivalent, milkfat basis[11]	563.8	568.4	565.6	565.9	574.1	586.0	583.9	574.7	577.7	582.3
Fats and oils--total fat content	60.5	63.0	64.8	66.8	69.7	68.0	66.4	65.3	64.9	65.3
Butter and margarine (product weight)	14.6	15.3	15.0	15.4	15.8	14.8	13.7	13.5	12.8	12.5
Shortening	21.5	22.2	22.4	22.4	25.1	24.1	22.5	22.3	20.9	20.9
Lard and edible tallow (direct use)	1.8	2.2	1.8	3.5	3.4	4.2	4.4	4.8	4.1	5.2
Salad and cooking oils	24.4	25.3	26.4	27.2	26.9	26.2	26.9	26.2	28.6	27.9
Fruits and vegetables[12]	656.0	656.1	650.3	677.7	691.3	705.8	694.3	710.9	717.9	699.6
Fruit	278.0	272.6	255.3	283.8	283.1	291.0	284.8	290.2	296.8	281.4
Fresh fruits	122.9	116.3	113.0	123.5	124.5	126.3	124.1	128.1	131.9	131.8
Canned fruit	21.2	21.0	19.8	22.9	20.7	21.0	17.5	18.8	20.4	17.3
Dried fruit	13.2	12.1	12.3	10.8	12.6	12.8	12.8	11.3	10.8	12.8
Frozen fruit	4.1	3.8	3.8	3.9	3.7	3.8	4.2	4.0	3.7	4.2
Selected fruit juices	116.4	119.0	106.0	122.1	121.2	126.7	125.8	127.7	129.3	115.0
Vegetables	378.0	383.5	395.0	393.9	408.3	414.7	409.5	420.7	421.1	418.1
Fresh	172.2	167.1	167.4	171.1	178.2	184.6	179.1	184.1	190.4	186.5
Canning	102.4	111.6	114.4	112.2	112.9	112.4	110.8	109.5	107.8	108.0
Freezing	67.4	66.8	72.6	70.9	76.0	78.4	79.9	84.7	81.9	82.3
Dehydrated and chips	29.8	31.0	32.8	31.5	33.6	31.0	31.3	34.5	32.7	32.9
Pulses	6.3	7.1	7.8	8.1	7.7	8.4	8.4	8.0	8.3	8.4
Peanuts (shelled)	7.0	6.0	6.5	6.2	6.1	5.8	5.7	5.7	5.9	5.9
Tree nuts (shelled)	2.2	2.4	2.2	2.2	2.4	2.3	1.9	2.0	2.1	2.3
Flour and cereal products[13]	174.2	181.5	183.0	185.5	190.1	192.9	191.3	197.4	198.9	--
Wheat flour	129.8	136.0	137.0	138.9	143.3	144.4	141.9	148.7	149.5	147.8
Rice (milled basis)	14.8	15.8	16.2	16.7	16.7	18.1	18.9	17.8	18.5	18.9
Caloric sweeteners[14]	133.1	137.0	137.9	141.2	144.4	147.4	149.9	150.7	154.1	--
Coffee (green bean equiv.)	10.1	10.3	10.3	10.0	9.1	8.2	8.0	8.9	9.3	--
Cocoa (chocolate liquor equiv.)	4.0	4.3	4.6	4.6	4.3	3.9	3.6	4.2	4.1	--

-- = Not available. 1. In pounds, retail weight unless otherwise stated. Consumption normally represents total supply minus exports, nonfood use, and ending stocks. Calendar-year data, except fresh citrus fruits, peanuts, tree nuts, and rice, which are on crop-year basis. 2. Totals may not add due to rounding. 3. Boneless, trimmed weight. Chicken series revised to exclude amount of ready-to-cook chicken going to pet food as well as some water leakage that occurs when chicken is cut up before packaging. 4. Excludes shipments to the U.S. territories. 5. Whole and part-skim milk cheese. Natural equivalent of cheese and cheese products. 6. Includes Swiss, Brick, Muenster, cream, Neufchatel, Blue, Gorgonzola, Edam, and Gouda. 7. Plain and flavored. 8. Plain and flavored, and buttermilk. 9. Heavy cream, light cream, half and half, eggnog, sour cream, and dip. 10. Formerly known as ice milk. 11. Includes condensed and evaporated milk and dry milk products. 12. Farm weight. 13. Includes rye, corn, oats, and barley products. Excludes quantities used in alcoholic beverages, corn sweeteners, and fuel. 14. Dry weight equivalent.

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