

Commodity Highlight: Radishes

Believed to be native to China, radishes (*Raphanus sativus*) are cruciferous vegetables of the same family as broccoli, kale, cabbage, and horseradish. There are many types of radishes produced in the world, with several sizes, colors (white, various shades of red, and black) and shapes (round, oblong, and long) available. Without doubt, the type most familiar to U.S. consumers is the small red globe table radish (var. *radiculata*) which can be found in virtually every supermarket produce department year-round. A cool-season crop, this root vegetable germinates and grows to marketable size in 3 to 6 weeks (depending on weather conditions).

According to the 2002 Census of Agriculture, U.S. area harvested for radishes (excluding daikon) totaled 17,056 acres. Florida is the leading producer of radishes and harvests 32 percent of the U.S. acreage. California (20 percent), Michigan (16 percent), Minnesota (10 percent), and Ohio (7 percent) complete the top five States in terms of harvested area. No other State reported more than 700 acres of radishes, with the top five states harvesting 85 percent of all U.S.-produced radishes.

Although there are no world acreage and production statistics for radishes, ERS has estimated national production based on available state data, shipment volume, and interpolation of Census acreage (fig. 10). U.S. radish production has averaged about 130 million pounds in the first 4 years of this decade—up about one-tenth from the 1990s.

USDA's National Agricultural Statistics Service (NASS) only estimated radish area, production, and value for 2000 and 2001, after which the crop was dropped from the estimates program for budgetary reasons. According to NASS, among the four States surveyed in 2000 and 2001, the leading producer of radishes was Florida (46 percent of the crop), followed by California (29 percent), Michigan (14 percent), and Ohio (11 percent).

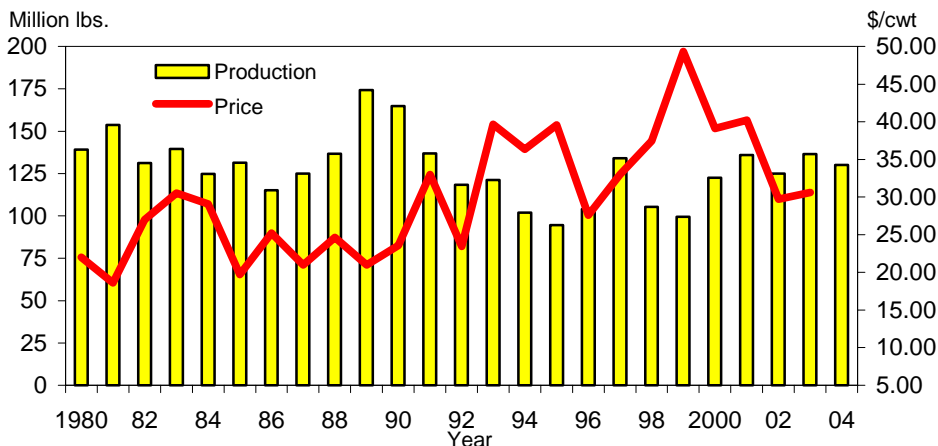
Table 17--U.S. radishes: Farm numbers and area harvested in leading States

State	Number of farms in 2002	2002	1997	1992
	<i>Number</i>	<i>Acres</i>		
U.S.	626	17,056	24,540	29,893
Florida	16	5,465	11,325	17,177
California	92	3,411	1,816	2,675
Michigan	26	2,646	3,636	2,967
Minnesota	18	1,754	1,345	1,492
Ohio	14	1,231	2,131	2,547
New York	36	682	920	897
Washington	31	428	434	305
Oregon	32	396	750	399
Indiana	10	236	1	4
New Jersey	23	192	265	292
Others	328	615	1,917	1,138
		<i>Percent</i>		
<i>Share of U.S.:</i>				
Top State	3	32	46	57
Top 3 States	21	68	68	76
Top 5 States	27	85	83	90

Source: *Census of Agriculture*, NASS, USDA (1997 & 2002), U.S. Dept of Commerce (1992).

Figure 10

U.S. radishes: Production & shipping-point price



Source: Economic Research Service, USDA except for 2000-01 from the National Agricultural Statistics Service, USDA.

The value of the U.S. radish crop during 2000-01 (the only 2 years where national data exists) was estimated to be \$50 million. More than half of this revenue (\$30 million) came from Florida. Based largely on data from Florida, average radish shipping-point prices were tracked back to 1980 (fig. 10). In the early 2000s, the fob shipping-point price of radishes was almost 39 cents a pound. This was up from 34 cents in the 1990s and 24 cents in the 1980s. Even after adjusting for inflation, radish prices in the early 2000s were up 1 percent from the average of the 1990s and were 7 percent higher than the 1980s average.

In the United States, radishes are largely produced for the fresh market with few processed uses. The primary use of radishes is as a salad ingredient, tray vegetable, or garnish. However, radishes can also be stir-fried, pickled, microwaved, or used in soups. The primary known nutritional value offered by radishes is Vitamin C. A serving of radishes (seven radishes, 85 grams) has just 20 calories but provides 30 percent of the USRDA for Vitamin C.

According to the 1999 AC Nielsen Homescan data base, supermarket purchases of fresh radishes totaled 76.2 million pounds. These retail sales were valued at \$62 million, with the retail price averaging 81 cents per pound. A substantial (although unknown) volume is also sold via food service outlets. A recent ERS report found radishes to be one of the five least-expensive vegetables in terms of consumer value, with an average cost of 11 cents per serving.

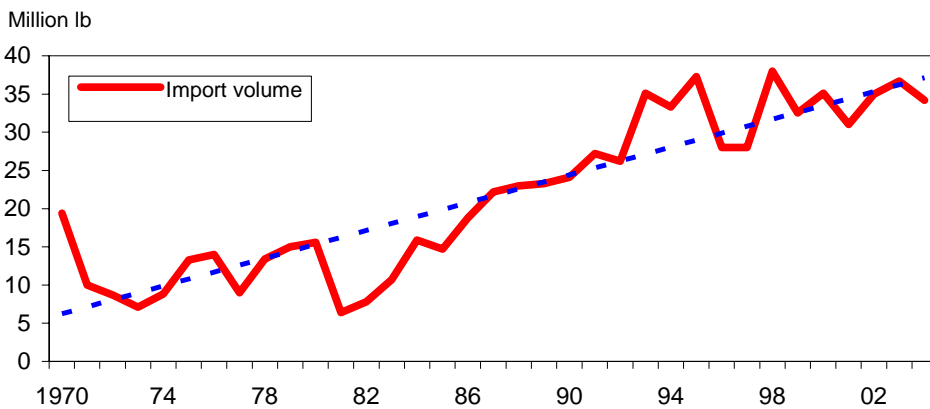
Trade is an important component of the U.S. radish industry. Imports, which account for about 24 percent of annual consumption, arrive primarily from Mexico (92 percent of 2001-03 volume), Canada (7 percent), and Guatemala (1 percent). Radish import volume has averaged 35 million pounds during the first 4 years of this decade—up 11 percent from the 1990s average volume and more than double the volume imported during the 1980s. Growth in radish imports likely reflects the rising popularity of salads and salad bars over the past 25 years. It also reflects rising demand for year-round supplies, with 73 percent of radish imports arriving during November-April when domestic supplies are typically lower. On average over the 2001-03 period, radish imports (HS code 0706902000) were valued at nearly \$13 million annually.

Unlike imports, the Census Bureau does not directly report radish exports, instead grouping them together with salad beets and other like root vegetables (HS code 0706900000). Using Canadian import data as a guide, ERS estimates that about 70 percent of this group consists of radishes. Accordingly, about 15 percent of radish supply is exported annually. Based on Canadian import data, Canada takes about 90 percent of estimated U.S. radish exports. Estimates suggest that radish export volume has changed little over the past three decades, averaging around 23 million pounds annually.

According to ERS estimates, per capita consumption of radishes has drifted lower since the early 1990s as domestic consumption has grown at a slower rate than that of the Nation's population. Domestic consumption of radishes averaged 141 million pounds annually during 2001-03—up just 1 percent from 1990-93, but 27 percent higher than 1970-73. Meanwhile, U.S. population has grown 12 percent since 1990-93 and 37 percent since the early 1970s. Per capita use of radishes averaged about 0.5 pound during 2000-03, down 10 percent from both 1990-93 and 1980-83.

Figure 11

U.S. radish import volume is trending higher



Source: Bureau of the Census, USDC.

Table 18--U.S. radishes: Supply, disappearance, and price

Year	Supply			Utilization			Season-ave. price	
	Production 1/	Imports 2/	Total	Exports 2/ 3/	Domestic	Per capita use	Current dollars 4/	Constant dollars 5/
-- Million pounds --			Pounds			-- \$/cwt --		
1970	83.7	19.4	103.1	--	103.1	0.50	--	--
1980	139.1	15.6	154.7	26.0	128.7	0.57	22.00	40.71
1990	164.9	24.1	189.0	24.3	164.7	0.66	23.60	28.93
2000	122.5	35.1	157.6	21.9	135.7	0.48	39.10	39.10
2001	135.9	31.0	166.9	22.1	144.8	0.51	40.20	39.26
2002	125.0	35.0	160.0	23.7	136.3	0.47	29.70	28.53
2003	136.5	36.7	173.2	25.5	147.7	0.51	30.60	28.87
2004 f	130.0	34.0	164.0	23.8	140.2	0.48	--	--

-- = Not available. f = ERS forecast. 1/ Source: ERS estimates except 2000-01 by the National Agricultural Statistics Service, USDA. 2/ Source is Bureau of the Census, USDC. 3/ Estimated by ERS as 70 percent of export category HS 0706900000. 4/ Price largely reflects Florida's radish crop as reported by Florida Agric Statistics. 5/ Constant-dollar prices calculated using the GDP deflator, 2000=100.

Note: For the most recent information on radishes, see: <http://www.ers.usda.gov/publications/vgs>