

UPPER MIDWEST MARKETING AREA

STUDY OF UPPER MIDWEST ORDER PRODUCERS BY SIZE RANGE OF DELIVERY

(May 1998 with Comparisons to May of Earlier Years)

Staff Paper 98-02

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ABSTRACT

An examination of Upper Midwest Order producer deliveries was conducted using May 1998 payroll records for 10,421 producers. The producers associated with the market in May were categorized into size ranges on the basis of their milk marketings during the month.

The average producer delivery for the market in May 1998 was 95,239 pounds, up 6.8% from the previous year and 66% higher than the average from the initial size range study conducted in 1981. The median producer delivery in May 1998 was 73,328 pounds, up 3.0% from a year earlier, and 23% lower than the average producer delivery for the month. Compared to previous studies, the percentage difference between the average and median producer deliveries has been gradually increasing, suggesting that "large" producers on the market are increasingly exerting more influence on the average size of producer deliveries to the market.

Comparisons between May 1981 and May 1998 show that the number and percentage of producers in size ranges above 70,000 pounds increased while the number and percentage of producers below 70,000 pounds declined. This reflects the trend of progressively larger producer deliveries being made to the market over time. In general, the number of large producers associated with the market relative to the number of producers in the middle size ranges has grown at an increasing rate from year to year.

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STUDY OF UPPER MIDWEST ORDER PRODUCERS BY SIZE RANGE OF DELIVERY
(May 1998 with Comparisons to May of Earlier Years)

Rodney M. Sebastian ^{1/}

I. INTRODUCTION

An ongoing study of Upper Midwest Order producer deliveries was completed using May 1998 payroll records for 10,421 producers in five states. This paper reports major findings for May 1998 and makes comparisons to similar studies completed for May of earlier years. The data included all producer milk historically pooled, even though in May 1998, and in May of several earlier years, there was eligible milk not pooled due to unusual price relationships and/or qualification circumstances. The terms "average producer delivery" and "average producer size" are used interchangeably throughout the paper and refer to the simple average pounds of milk marketed by producers in a given month.

For the analysis, producers were divided into nine size range categories based on pounds of milk marketed by them during the month. Data on individual producer marketings were obtained from producer payrolls submitted by handlers to the Market Administrator. The study focused on numbers and distributions of producers by size range and examined the overall trend in average producer size for the market and each of the five states in the procurement area.

II. SIZE RANGE OF DELIVERIES, MAY 1998

In May 1998, there were 10,421 producers on the order. Table 1 on Page 2 shows, for May 1998, the number and percent of producers by size range of delivery for the market and the five states which supply the order.

^{1/} The author, Rodney M. Sebastian, is an Agricultural Economist with the Market Administrator's Office, Minneapolis, Minnesota.

Table 1
Number and Percent of Producers by Size Range and State - May 1998

Size Range		Minnesota	Wisconsin	North Dakota	South Dakota	Iowa	Market
Equal to or more than	Less than						
(Pounds)		<u>Number of Producers</u>					
	20,000	172	159	8	24	24	387
20,000	30,000	267	164	10	12	13	466
30,000	50,000	1,070	617	51	27	42	1,807
50,000	70,000	1,362	702	47	27	43	2,181
70,000	100,000	1,579	808	70	41	46	2,544
100,000	150,000	1,172	547	48	30	29	1,826
150,000	250,000	535	221	20	25	16	817
250,000	400,000	142	66	6	7	1	222
400,000		<u>121</u>	<u>41</u>	<u>5</u>	<u>4</u>	—	<u>171</u>
Total		<u>6,420</u>	<u>3,325</u>	<u>265</u>	<u>197</u>	<u>214</u>	<u>10,421</u>
		<u>Percent of Producers</u>					
	20,000	2.7	4.8	3.0	12.2	11.2	3.7
20,000	30,000	4.2	4.9	3.8	6.1	6.1	4.5
30,000	50,000	16.7	18.6	19.2	13.7	19.6	17.3
50,000	70,000	21.2	21.1	17.7	13.7	20.1	20.9
70,000	100,000	24.6	24.3	26.4	20.8	21.5	24.4
100,000	150,000	18.3	16.5	18.1	15.2	13.6	17.5
150,000	250,000	8.3	6.6	7.5	12.7	7.5	7.8
250,000	400,000	2.2	2.0	2.3	3.6	0.5	2.1
400,000		<u>1.9</u>	<u>1.2</u>	<u>1.9</u>	<u>2.0</u>	—	<u>1.6</u>
Total ^{a/}		100.0	100.0	100.0	100.0	100.0	100.0
		<u>Average Producer Size</u>					
(Pounds)		98,616	89,076	106,168	100,771	71,059	95,239

^{a/} May not add due to rounding.

A. Producer Distribution

The two size ranges with the largest number of producers in May 1998 were the 50,000-70,000 and 70,000-100,000 pound ranges which included 2,181 producers and 2,544 producers, respectively. The two size ranges, combined, represent nearly half of all producers delivering to the market. The third largest size range was the 100,000-150,000 pound range with 1,826 producers or 17.5% of the total. In May 1998, about 80% of producers delivered from 30,000 to 150,000 pounds. The remaining 8% of producers delivered less than 30,000 pounds.

In Minnesota, where 62% of producers are located, the distribution of producers within the nine size ranges varied by no more than one percentage point from the distribution of the market. In contrast, the most observable differences in the distribution of producer size from the market were in Iowa and South Dakota. In both of those states there was a significantly greater proportion of producer milk deliveries under 50,000 pounds than the other three states and the market. Proportionally, South Dakota also had more producers with milk deliveries above 150,000 than the other states resulting in a flatter distribution of producer size relative to the rest of market. These variations in the distribution of producer size by state were also reflected in average producer deliveries. The market average delivery in May 1998 was 95,239 pounds while average deliveries by state ranged from 71,059 pounds in Iowa to 106,168 pounds in North Dakota.

Figure 1
Frequency Distribution of Producers
by Size Range - May 1998

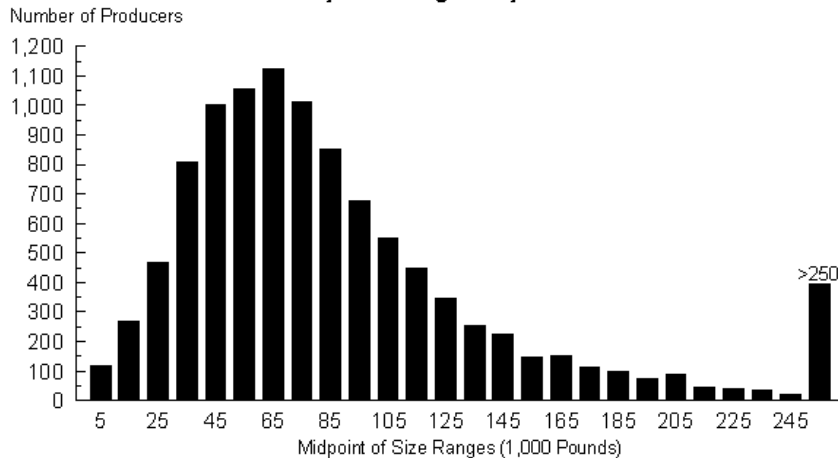


Figure 1, shown on the previous page with an expanded number of size ranges, illustrates the frequency distribution of deliveries from producers associated with the market from a different perspective. The frequency distribution of producer deliveries is highly peaked within the ranges of 50,000-80,000 pounds and is positively skewed with a long right-hand tail. The figure also illustrates the growing number of producers with deliveries over 250,000 pounds, a reflection of the structural changes occurring in the midwestern dairy industry.

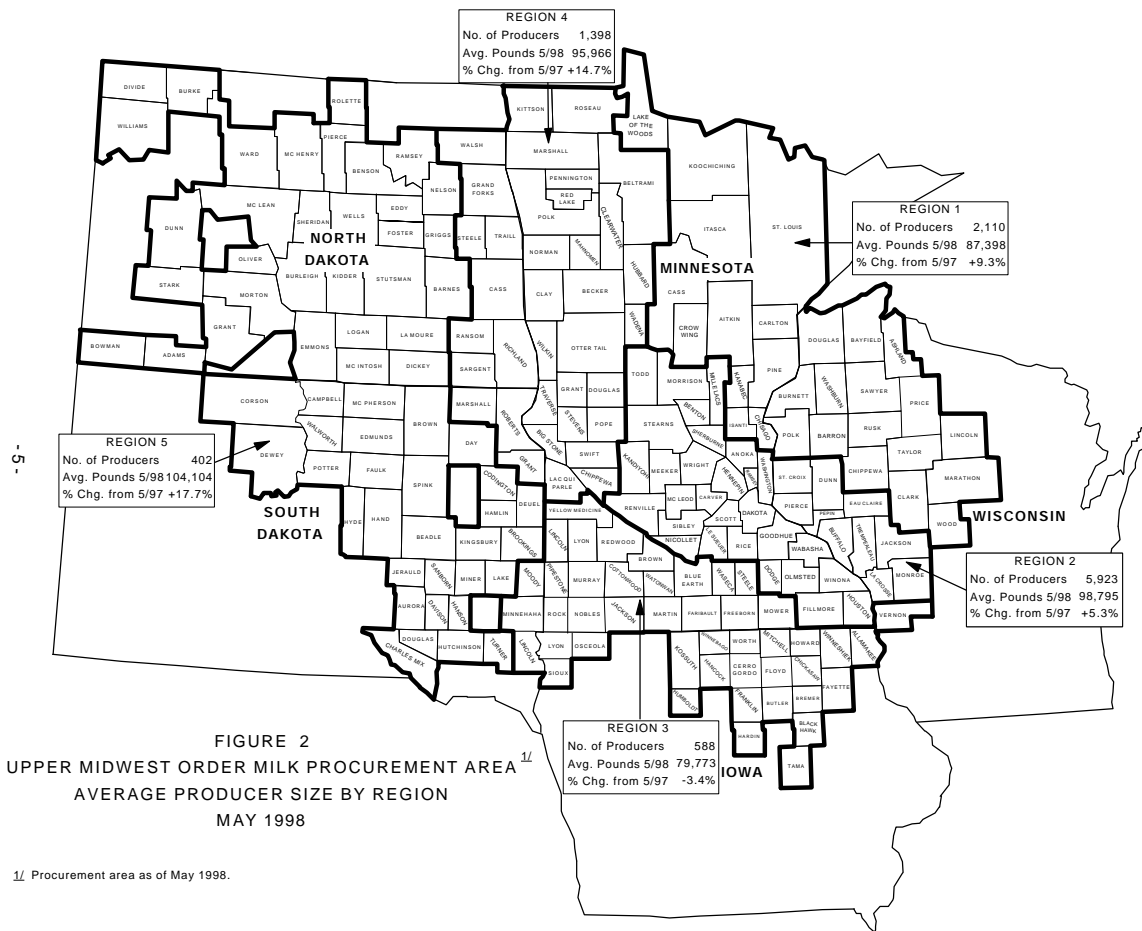
The median ^{2/} delivery, for the market, was 23% below the mean at 73,328 pounds in May 1998. The value of using the median producer size in this study is that it is a measure of delivery size that may be more representative of most producers on the order. The higher mean, as compared to the median, results from a small percentage of producers delivering quantities of milk significantly greater than the deliveries of most other producers on the order. (Example: 393 producers delivering 250,000 pounds or more as illustrated in Figure 1.)

The percentage difference between the mean and the median in individual states ranged from 13% in Iowa to about 28% in North Dakota. The differences in Minnesota, South Dakota and Wisconsin were 24%, 23% and 21%, respectively. The comparatively larger differences observed between the mean and median producer size in the May 1998 data relative to the differences from May of earlier years can be attributed to the growing number of large producers on the market.

B. Regional Variations in Average Producer Size

Within the procurement area, regional variations in the size of producer deliveries appear to exist, as shown in Figure 2 on Page 5. The regions used in this study were divided along county boundaries into five relatively homogeneous geographic regions. The observed regional variation in the average size of producer deliveries appears to correspond with geographic (climate, soil type, etc.) and demographic differences that exist across the procurement area. These two factors, among others, contribute to the

^{2/} The median represents the middle value of all producer deliveries ranked according to the size of delivery. The median, unlike the mean, is not influenced by outliers (e.g. a few large producers).



comparative advantage of dairying versus production of other agricultural commodities, thus influencing the scale and location of dairy farming throughout the procurement area.

Among the regions identified, producers in Region 2, comprised of primarily southeastern Minnesota and western Wisconsin, tended to be larger and more geographically concentrated than producers in the adjoining regions. The highest regional average delivery per producer in May 1998 was, however, in North and South Dakota (Region 5) where the average size was 104,104 pounds. In contrast, the lowest average producer delivery was 23% less at 79,773 pounds in the area comprised of southwestern Minnesota and northern Iowa (Region 3).

Average producer deliveries were up from the previous year in four of the five regions with increases of 5.3% in Region 2 up to 17.7% in Region 5. In Region 3, which represents most of northern Iowa and southwestern Minnesota, average producer deliveries declined 3.4%.

III. SIZE RANGE OF DELIVERIES, MAY 1998 COMPARED TO MAY 1997

On Table 2, shown on the following page, May 1998 results were compared with those from May 1997. The primary observation was that producers with deliveries of 100,000 pounds or more to the market increased both numerically and as a percentage of the total. In contrast, there was a corresponding decline in the number and percentage of producers in size ranges from 20,000 to 100,000 pounds.

The average producer size for the market in May 1998 of 95,239 pounds was up 6.8% from May 1997. A comparison of the average producer size between May of both years was also made with only producers on the market in both months. Comparison of this "constant" group of 9,259 producers limits the influence of institutional factors (shifts of plants and producers on and off the market) on average producer size. The result is a better measure of how average producer deliveries may be responding to changing market conditions and management practices. The average producer size for this "constant"

group of producers increased 4.3% from May 1997 to May 1998, compared with a 6.8% increase for all producers, suggesting that new producers on the market were larger, on average, than producers leaving the market.

Table 2
Number and Percent of Producers by Size Range

Size Range		May 1997 ^{a/}		May 1998		Change From May 1997 to May 1998	
Equal to or more than (Pounds)	Less than	No. of Producers	% of Market	No. of Producers	% of Market	No. of Producers	% of Market
	20,000	379	3.5	387	3.7	+ 8	+ 0.2
20,000	30,000	542	5.0	466	4.5	- 76	- 0.5
30,000	50,000	1,996	18.5	1,807	17.3	- 189	- 1.2
50,000	70,000	2,352	21.8	2,181	20.9	- 171	- 0.9
70,000	100,000	2,648	24.5	2,544	24.4	- 104	- 0.1
100,000	150,000	1,756	16.3	1,826	17.5	+ 70	+ 1.2
150,000	250,000	810	7.5	817	7.8	+ 7	+ 0.3
250,000	400,000	189	1.8	222	2.1	+ 33	+ 0.3
400,000		<u>128</u>	<u>1.2</u>	<u>171</u>	<u>1.6</u>	<u>+ 43</u>	<u>+ 0.4</u>
Market ^{a/}		<u>10,800</u>	<u>100.0</u>	<u>10,421</u>	<u>100.0</u>	<u>- 379</u>	
				<u>May 1997</u>	<u>May 1998</u>		
Average Producer Size (Market)				89,180	95,239		
Average Producer Size (Constant Group)				92,478	96,467		

^{a/} Percentages do not add due to rounding.

Average Producer Size by State

Table 3 shows, for the market and the states which supply the market, the average producer delivery during May 1998 with comparisons to May 1997. In Minnesota, which

supplied 64% of total producer milk, the average producer delivery was 3.5% above the market at 98,616 pounds. The state with the highest average producer size was North Dakota with 106,168 pounds, while the lowest was Iowa at 71,059 pounds.

Table 3
Average Producer Size and Percent of Total Producer Milk by State

State	May 1997		May 1998		% Change in Average Producer Size
	Average Producer Size (Pounds)	% of Producer Milk	Average Producer Size (Pounds)	% of Producer Milk	
Minnesota	91,260	65.7	98,616	63.8	+8.1
Wisconsin	85,388	28.3	89,076	29.8	+4.3
North Dakota	82,817	2.5	106,168	2.8	+28.2
South Dakota	96,534	1.9	100,771	2.0	+4.4
Iowa	79,374	1.6	71,059	1.5	-10.5
Market	89,180	100.0	95,239	100.0	+6.8

Deliveries per producer, compared to the previous year, were up in Minnesota, Wisconsin, and the Dakotas where increases in average producer size ranged from 4.3% to 28.2%. In Iowa, the average producer size declined 10.5%. The large changes in average producer deliveries in the Dakotas and Iowa from one year to the next can be attributed to the small number of producers, relative to Minnesota and Wisconsin, which contributes significantly to the impact that changing producer composition can have on average producer size.

IV. MAY 1998 AVERAGE PRODUCER SIZE COMPARED TO MAY 1981

Table 4 shows producers by size range for May 1998 with comparisons to May 1981, the first study using these same size categories. During the seventeen-year period there was a general movement among producers toward the higher size ranges, as the average

producer delivery for the market rose 65.9% from 57,404 pounds to 95,239 pounds. As a percentage of the market, the relative number of producers in size ranges of less than 70,000 pounds declined, while the relative number in size ranges of 70,000 pounds or more increased during the period. The largest drop, as a percentage of the market, was the 30,000-50,000 pound category which declined 15.9 percentage points. The largest increase for an individual range during the period was the 100,000-150,000 pound range which gained 11.0 percentage points. The order of rank for the various size ranges has changed significantly since May 1981, reflecting the general rise in producer deliveries over time. The size range with the largest number of producers in May 1981 was the 30,000-50,000 pound range, while in May 1998, the 70,000-100,000 pound range had the largest number of producers.

Table 4
Number and Percent of Producers by Size Range

Size Range		May 1981		May 1998		Change From May 1981 to May 1998	
Equal to or more than	Less than	Producers	% of Market	Producers	% of Market	Producers	% of Market
(Pounds)							
	20,000	693	4.6	387	3.7	-306	-0.9
20,000	30,000	1,449	9.6	466	4.5	-983	-5.1
30,000	50,000	5,022	33.2	1,807	17.3	-3,215	-15.9
50,000	70,000	4,143	27.4	2,181	20.9	-1,962	-6.5
70,000	100,000	2,628	17.4	2,544	24.4	- 84	+7.0
100,000	150,000	980	6.5	1,826	17.5	+846	+11.0
150,000	250,000	204	1.3	817	7.8	+613	+ 6.5
250,000	400,000	16	0.1	222	2.1	+206	+2.0
400,000		4	*	171	1.6	+167	+1.6
Market ^{a/}		<u>15,139</u>	<u>100.0</u>	<u>10,421</u>	<u>100.0</u>	<u>-4,718</u>	

* Less than 0.05%.

a/ May not add due to rounding.

Another significant change is the drop in the proportion of producers with deliveries in the middle size ranges of 30,000 to 100,000 pounds. In May 1981, nearly 78% of producers had deliveries in the middle ranges compared to 63% in 1998. The declining percentage of producers with deliveries in the middle ranges also corresponds with progressively larger standard deviations ^{3/} from the average producer size in recent years. Producers with milk deliveries in the middle size ranges still constitute the majority of producers on the market, but as the declining percentages and the larger standard deviations from the mean producer size reveal, the concentration of producer deliveries around the average is declining. Much of the wider dispersion in producer size can be attributed to the increasing number of producers with deliveries of 100,000 or more pounds. However, there also appears to be some stability in the proportion of producers with deliveries to the market of less than 20,000 pounds, which have on average represented about 4% of the producers associated with the market. In general terms, the number of large producers associated with the market has increased relative to the number of producers in the middle size ranges. Detail on numbers and percent of producers by size range for May of each of the years 1981-1998 is shown in Appendix Table A-2.

Average Producer Size by State

Average producer size has increased substantially since May 1981 as shown in Table 5. During the seventeen-year period, the average producer size for the market rose 65.9%, from 57,404 pounds in May 1981 to 95,239 pounds in May 1998. Increases in the five states ranged from 28.9% in Iowa to 92.8% in North Dakota.

Detail on average producer delivery by state and for the market for May 1981-1998 is provided in Appendix Table A-3, with the market average during the period also illustrated in Appendix Figure A-1.

^{3/} The standard deviation () represents a measure of variability that is expressed in the same units of measurement as the data values used in the analysis. The standard deviation from the average producer size has increased from 38,233 pounds in May 1987 to 109,025 pounds in May 1998. Prior to May 1987, standard deviations from the mean were not available.

Table 5
Average Producer Size by State - May 1981 and May 1998

<u>State</u>	Average Producer Size <u>May 1981</u> <u>May 1998</u> ----- (Pounds) -----		% Change in Average <u>Producer Size</u>
Minnesota	58,472	98,616	+68.7
Wisconsin	56,059	89,076	+58.9
North Dakota	55,070	106,168	+92.8
South Dakota	68,674	100,771	+46.7
Iowa	55,146	71,059	+28.9
Market	57,404	95,239	+65.9

V. SUMMARY

The long-term trend toward larger producer deliveries on the Upper Midwest Order continues to be evident. The average producer size increased nearly 7% from May 1997 to May 1998 and has risen 66% since May 1981. Comparisons between May 1998 and May 1997 show that the number and percentage of producers in size ranges below 20,000 pounds and above 100,000 pounds increased versus a decline in the number and percentage of producers with deliveries from 20,000 to 100,000 pounds. Over the longer period from May 1981 to May 1998, the number and percentage of producers in size ranges above 70,000 pounds increased while the number and percentage of producers with deliveries below 70,000 pounds declined.

In May 1998, average producer deliveries were up from the previous year in four of the five states in the procurement area. Increases in average producer size ranged from 4% in Wisconsin to 28% in North Dakota while average producer deliveries declined more than 10% in Iowa. In the seventeen-year period since May 1981, increases in state average producer sizes ranged from 29% in Iowa to nearly 93% in North Dakota.

Average deliveries per producer by state were highest in North Dakota and lowest in Iowa, which generally appears to coincide with the regional variations observed throughout the procurement area. Among the regions identified, the highest regional average producer size is in the Dakotas while the lowest regional average includes an area comprised of the southwestern Minnesota and northern Iowa.

The median producer size in May 1998 increased 3% from the previous year and is 23% lower than the average producer size. Compared to previous studies, the percentage difference between the average and median producer deliveries is gradually increasing. The growing difference between the average and the median suggests that "large" producers, compared to most other Upper Midwest Order producers, are increasingly exerting more influence on the average size of deliveries to the market. In other words, changes in the median producer size from a year earlier may reflect more closely changes in the size of deliveries for most producers, while the rise in the average producer size reflects relatively larger increases for a small but growing group of large producers on the Upper Midwest Order.

APPENDIX

TABLES

A-1	Number of Producers, Total Producer Deliveries, and Average Delivery Per Producer by Size Range, May 1998	A-1
A-2	Number and Percent of Producers by Size Range, May 1981-1998	A-2
A-3	Average Producer Size by State, May 1981-1998	A-4

FIGURE

A-1	Average Producer Size, May 1981-1998 (All Producers on the Market)	A-5
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Table A-1
Number of Producers, Total Producer Deliveries, and
Average Delivery Per Producer by Size Range
May 1998

<u>Size Range</u>		<u>Producers</u>	<u>Total Producer Deliveries</u>	<u>Average Delivery Per Producer</u>	
<u>Equal to or more than</u>	<u>Less than</u>			<u>Monthly</u>	<u>Daily</u>
(Pounds)			----- (Pounds) -----		
	20,000	387	4,831,767	12,485	403
20,000	30,000	466	11,910,375	25,559	824
30,000	50,000	1,807	73,454,750	40,650	1,311
50,000	70,000	2,181	131,018,669	60,073	1,938
70,000	100,000	2,544	212,541,344	83,546	2,695
100,000	150,000	1,826	219,637,028	120,283	3,880
150,000	250,000	817	150,824,968	184,608	5,955
250,000	400,000	222	67,536,796	304,220	9,814
400,000		<u>171</u>	<u>120,731,873</u>	<u>706,034</u>	<u>22,775</u>
Total		<u>10,421</u>	<u>992,487,570</u>	<u>95,239</u>	<u>3,072</u>

**Table A-2
Number and Percent of Producers by Size Range
May 1981-1998**

Size Range Equal to or Less more than than (Pounds)		May												
		1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
		<u>Number of Producers</u>												
	20,000	693	810	665	756	682	593	494	447	453	376	339	418	402
20,000	30,000	1,449	1,517	1,416	1,546	1,298	1,198	979	852	865	573	626	714	669
30,000	50,000	5,022	5,233	5,014	5,144	4,711	4,390	3,891	3,628	3,362	2,276	2,494	2,732	2,566
50,000	70,000	4,143	4,264	4,320	4,188	4,340	4,355	4,074	4,066	3,709	2,759	2,726	2,963	3,085
70,000	100,000	2,628	2,616	2,959	2,761	3,207	3,466	3,401	3,499	3,156	2,550	2,560	2,857	3,119
100,000	150,000	980	987	1,177	1,026	1,331	1,551	1,533	1,627	1,497	1,376	1,401	1,525	1,840
150,000	250,000	204	231	278	238	327	377	402	462	469	416	427	484	620
250,000	400,000	16	19	28	19	46	63	60	62	57	55	58	74	120
400,000		4	3	5	2	3	5	7	12	10	12	15	17	25
Total		<u>15,139</u>	<u>15,680</u>	<u>15,862</u>	<u>15,680</u>	<u>15,945</u>	<u>15,998</u>	<u>14,841</u>	<u>14,655</u>	<u>13,578</u>	<u>10,393</u>	<u>10,646</u>	<u>11,784</u>	<u>12,446</u>
		<u>Percent of Producers</u>												
	20,000	4.6	5.2	4.2	4.8	4.3	3.7	3.3	3.1	3.3	3.6	3.2	3.5	3.2
20,000	30,000	9.6	9.7	8.9	9.9	8.1	7.5	6.6	5.8	6.4	5.5	5.9	6.1	5.4
30,000	50,000	33.2	33.4	31.6	32.8	29.5	27.4	26.2	24.8	24.8	21.9	23.4	23.2	20.6
50,000	70,000	27.4	27.2	27.2	26.7	27.2	27.2	27.5	27.7	27.3	26.5	25.6	25.1	24.8
70,000	100,000	17.4	16.7	18.7	17.6	20.1	21.7	22.9	23.9	23.2	24.5	24.0	24.2	25.1
100,000	150,000	6.5	6.3	7.4	6.5	8.3	9.7	10.3	11.1	11.0	13.2	13.2	12.9	14.8
150,000	250,000	1.3	1.5	1.8	1.5	2.1	2.4	2.7	3.2	3.5	4.0	4.0	4.1	5.0
250,000	400,000	0.1	0.1	0.2	0.1	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.6	1.0
400,000		*	*	*	*	*	*	*	0.1	0.1	0.1	0.1	0.1	0.2
Total **		<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

* Less than 0.05%

** Percentages may not add due to rounding.

Table A-2 (Continued)
Number and Percent of Producers by Size Range
May 1981-1998

<u>Size Range</u>		<u>May</u>				
Equal to or more than	Less than	1994	1995	1996	1997	1998
(Pounds)		<u>Number of Producers</u>				
	20,000	405	435	610	379	387
20,000	30,000	716	641	737	542	466
30,000	50,000	2,749	2,442	2,582	1,996	1,807
50,000	70,000	2,973	2,831	2,755	2,352	2,181
70,000	100,000	2,971	3,039	2,908	2,648	2,544
100,000	150,000	1,842	1,903	1,791	1,756	1,826
150,000	250,000	658	760	739	810	817
250,000	400,000	124	156	182	189	222
400,000		<u>36</u>	<u>56</u>	<u>81</u>	<u>128</u>	<u>171</u>
Total		<u>12,474</u>	<u>12,263</u>	<u>12,385</u>	<u>10,800</u>	<u>10,421</u>
		<u>Percent of Producers</u>				
	20,000	3.2	3.5	4.9	3.5	3.7
20,000	30,000	5.7	5.2	6.0	5.0	4.5
30,000	50,000	22.0	19.9	20.8	18.5	17.3
50,000	70,000	23.8	23.1	22.2	21.8	20.9
70,000	100,000	23.8	24.8	23.5	24.5	24.4
100,000	150,000	14.8	15.5	14.5	16.3	17.5
150,000	250,000	5.3	6.2	6.0	7.5	7.8
250,000	400,000	1.0	1.3	1.5	1.8	2.1
400,000		<u>0.3</u>	<u>0.5</u>	<u>0.7</u>	<u>1.2</u>	<u>1.6</u>
Total **		<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

* Less than 0.05%

** Percentages may not add due to rounding.

Table A-3
Average Producer Size by State
May 1981-1998

	<u>Minnesota</u> ^{a/}	<u>Wisconsin</u> ^{b/}	<u>North Dakota</u> (Pounds)	<u>South Dakota</u>	<u>Iowa</u>	<u>Market</u>	<u>% Change from a year earlier</u>
1981	58,472	56,059	55,070	68,674	55,146	57,404	---
1982	57,728	56,386	51,353	64,181	55,129	56,943	(0.8)
1983	60,634	58,668	56,852	72,982	55,954	59,704	4.8
1984	57,551	57,537	54,425	68,465	47,862	57,521	(3.7)
1985	61,994	61,588	60,517	70,995	51,745	61,817	7.5
1986	64,689	64,753	61,047	76,982	60,889	64,732	4.7
1987	66,255	66,922	64,189	79,360	64,220	66,661	3.0
1988	68,964	67,636	69,163	80,352	65,351	68,721	3.1
1989	69,617	66,326	66,060	79,870	67,194	68,679	(0.1)
1990	72,657	68,726	71,826	75,750	72,387	72,289	5.3
1991	72,191	68,820	71,825	85,239	70,049	72,097	(0.3)
1992	72,721	67,837	75,748	83,789	74,642	72,222	0.2
1993	77,000	73,576	80,088	92,018	78,652	76,761	6.3
1994	78,033	74,108	77,798	85,673	73,055	77,077	0.4
1995	81,875	78,710	79,282	87,468	79,798	80,992	5.1
1996	83,703	77,696	83,025	70,777	56,282	80,324	(0.8)
1997	91,260	85,388	82,817	96,534	79,374	89,180	11.0
1998	98,616	89,076	106,168	100,771	71,059	95,239	6.8

^{a/} Includes producers from New Mexico in 1993.

^{b/} Includes producers from Michigan in 1984 through 1989.

Figure A -1
Average Producer Size, May 1981 - 1998
(All Producers on the Market)

