

UPPER MIDWEST MARKETING AREA

STUDY OF PRODUCER MILK DELIVERIES ON THE CHICAGO REGIONAL AND UPPER MIDWEST ORDERS

(May 1990 to May 1999)



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ABSTRACT

An examination of producer milk deliveries on the Chicago Regional and Upper Midwest Orders was conducted using ten years of combined payroll records for May from both orders. The producers associated with the two markets were categorized into size ranges on the basis of their milk deliveries during those months. Additionally, records for a subgroup of producers associated with the two markets each May since 1990 were analyzed to provide a better view of the trends in milk production on farms. Using the subgroup of "continuous" producers was a means of reducing the influence of institutional factors on the results of this study.

There were 24,829 producers associated with the two marketing orders in May 1999. The average milk delivery for the month was 108,933 pounds, a 7% increase from the previous year and 42% higher than the average from 1990. The median producer delivery in May 1999 was 79,461 pounds, up 4% from the median a year earlier, and was 27% lower than the average producer delivery for May 1999. Average producer deliveries for the 11,803 continuous producers was 115,627 pounds, up 4% from the previous year and 33% higher than in May 1990. The median producer size for the continuous group rose nearly 1% and 14% for the one and ten year periods, respectively. The differences observed in the increases between the average and median producer milk deliveries, suggests that "large" producers coming onto the market and herd expansions by those on the order are increasingly exerting more influence on the average size of producer deliveries for the market.

The other primary observation is that the distribution of producers in the nine size ranges used in the study is flattening out over time. The proportion of producers with deliveries in the middle size ranges declined while the number of producers in the larger size ranges increased and those in the smaller size ranges have been relatively stable during the ten-year period. A similar flattening and shift in the distribution of producer numbers was also observed in the continuous producer group.

TABLE OF CONTENTS

	<u>Page</u>
I. INTRODUCTION	1
II. SIZE RANGE OF DELIVERIES, MAY 1999	1
III. SIZE RANGE OF DELIVERIES, MAY 1999 COMPARED TO MAY 1998	4
IV. MAY 1999 AVERAGE PRODUCER SIZE COMPARED TO MAY 1990	7
V. SUMMARY	8
APPENDIX	

STUDY OF PRODUCER MILK DELIVERIES ON THE CHICAGO REGIONAL AND UPPER MIDWEST ORDERS

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Rodney M. Sebastian ^{1/}

I. INTRODUCTION

A study of former Chicago Regional and Upper Midwest Order producer milk deliveries was completed using payroll records for the month of May for the years 1990 through 1999. The data included all producer milk historically pooled, even though 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. Additionally, records for a subgroup of producers associated with the two markets each May since 1990 were analyzed to provide a better view of the trends in milk production on farms. Using the subgroup of "continuous" producers was a means of reducing the influence of institutional factors (shifts of plants and producers on and off the market) on the results of this study. Data on individual producer milk deliveries 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 two marketing orders and in each of the six primary states from which milk is procured.

II. SIZE RANGE OF DELIVERIES, MAY 1999

In May 1999, there were 24,829 producers on the two orders. Table 1 shows the number and percent of producers by size range of delivery for the combined markets and from six primary states which supply the orders.

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**Table 1
Number and Percent of All Producers by Size Range and State - May 1999**

Size Range		Illinois ^{1/}	Iowa	Minnesota	N.Dakota	S.Dakota	Wisconsin ^{2/}	Market
Equal to or more than	Less than							
(Pounds)								
Number of Producers								
	20,000	18	2	152	10	10	609	801
20,000	30,000	26	9	255	8	9	730	1,037
30,000	50,000	69	30	1,038	43	42	2,530	3,752
50,000	70,000	108	32	1,300	44	46	3,273	4,803
70,000	100,000	146	37	1,517	48	46	3,959	5,753
100,000	150,000	150	31	1,238	40	50	3,305	4,814
150,000	250,000	89	23	623	18	43	1,702	2,498
250,000	400,000	22	6	164	2	10	548	752
400,000		14	1	150	5	10	439	619
Total		642	171	6,437	218	266	17,095	24,829
Percentage of Producers								
	20,000	2.80	1.17	2.36	4.59	3.76	3.56	3.23
20,000	30,000	4.05	5.26	3.96	3.67	3.38	4.27	4.18
30,000	50,000	10.75	17.54	16.13	19.72	15.79	14.80	15.11
50,000	70,000	16.82	18.71	20.20	20.18	17.29	19.15	19.34
70,000	100,000	22.74	21.64	23.57	22.02	17.29	23.16	23.17
100,000	150,000	23.36	18.13	19.23	18.35	18.80	19.33	19.39
150,000	250,000	13.86	13.45	9.68	8.26	16.17	9.96	10.06
250,000	400,000	3.43	3.51	2.55	0.92	3.76	3.21	3.03
400,000		2.18	0.58	2.33	2.29	3.76	2.57	2.49
Total		100.00	100.00	100.00	100.00	100.00	100.00	100.00

Number and Percent of Continuous Producers by Size Range and State - May 1999

Size Range		Illinois	Iowa	Minnesota	N.Dakota	S.Dakota	Wisconsin ^{2/}	Market
Equal to or more than	Less than							
(Pounds)								
Number of Producers								
	20,000	13	1	72	6	1	164	257
20,000	30,000	13	3	114	6	2	195	333
30,000	50,000	38	18	554	26	8	844	1,488
50,000	70,000	61	17	749	25	17	1,260	2,129
70,000	100,000	70	22	981	33	12	1,766	2,884
100,000	150,000	90	18	807	23	12	1,587	2,537
150,000	250,000	60	11	425	13	12	914	1,435
250,000	400,000	14	4	99	1	3	306	427
400,000		7	0	87	3	1	215	313
Total		366	94	3,888	136	68	7,251	11,803
Percentage of Producers								
	20,000	3.55	1.06	1.85	4.41	1.47	2.26	2.18
20,000	30,000	3.55	3.19	2.93	4.41	2.94	2.69	2.82
30,000	50,000	10.38	19.15	14.25	19.12	11.76	11.64	12.61
50,000	70,000	16.67	18.09	19.26	18.38	25.00	17.38	18.04
70,000	100,000	19.13	23.40	25.23	24.26	17.65	24.36	24.43
100,000	150,000	24.59	19.15	20.76	16.91	17.65	21.89	21.49
150,000	250,000	16.39	11.70	10.93	9.56	17.65	12.61	12.16
250,000	400,000	3.83	4.26	2.55	0.74	4.41	4.22	3.62
400,000		1.91	0.00	2.24	2.21	1.47	2.97	2.65
Total		100.00	100.00	100.00	100.00	100.00	100.00	100.00

1/ Includes producers from Kentucky and Tennessee.

2/ Includes producers from the Michigan Upper Peninsula.

Three of the nine size ranges, from 50,000 to 150,000 pounds, included nearly 62% of all producers on the two markets in May 1999 while about 23% of the producers delivered less than 50,000 pounds. The remaining 16% of the producers had milk deliveries of 150,000 or more pounds during the month. In comparison, 64% of the continuous producer group had milk deliveries within the 50,000 and 150,000 pound size ranges. Also, the distribution of continuous producers was less concentrated around the mean delivery size and showed less skewness when compared to all producers on the two markets.

Approximately 95% of all producers on the markets were located in Minnesota and Wisconsin while the remaining 5% were from Illinois, Iowa, and the Dakotas. In Wisconsin, which represented nearly 69% of all producers on the two markets, the distribution of producers within the nine size ranges varied by less than one-half percentage point from the distribution for the combined markets. The distribution of Minnesota producers, which represented 26% of producers on the two markets, were more concentrated within the 50,000 to 150,000 pound ranges than the combined markets.

Table 2
Measures of Average Producer Milk Deliveries by State - May 1999

State	All Producers in May 1999				Ten-Year Continuous Producers			
	Number of Farms	Mean	Median	Percent Difference	Number of Farms	Mean	Median	Percent Difference
		<i>(Pounds)</i>				<i>(Pounds)</i>		
Illinois ^{1/}	642	112,469	88,874	-20.98	366	114,764	93,607	-18.44
Iowa	171	97,118	76,179	-21.56	94	96,074	76,019	-20.87
Minnesota	6,437	105,669	77,718	-26.45	3,888	106,319	82,657	-22.26
North Dakota	218	107,166	71,953	-32.86	136	97,725	73,178	-25.12
South Dakota	266	128,474	80,593	-37.27	68	109,948	79,427	-27.76
Wisconsin ^{2/}	17,095	109,865	79,854	-27.32	7,251	121,304	88,774	-26.82
Market	24,829	108,933	79,461	-27.06	11,803	115,627	86,129	-25.51

1/ Includes producers from Kentucky and Tennessee in May 1999.

2/ Includes producers from the Michigan Upper Peninsula.

The market average producer delivery in May 1999 was 108,933 pounds while average deliveries by state ranged from 97,118 pounds in Iowa to 128,474 pounds in South Dakota. In the continuous producer group the average milk delivery was 115,627 pounds for the market with state averages ranging from 96,074 pounds in Iowa to 121,304 pounds in Wisconsin.

The May 1999 median ^{2/} delivery for all producers on the market was 79,461 pounds while the median for producers continuously on the market was 86,129 pounds. The median, as a measure of producer size, may be more representative of milk deliveries by most producers on the two orders. The higher means, as compared to the respective medians, results from a relatively small percentage of producers delivering quantities of milk significantly greater than the deliveries of most other producers on the market.

III. SIZE RANGE OF DELIVERIES, MAY 1999 COMPARED TO MAY 1998

Table 3
Number and Percent of Producers by Size Range and Year - May 1998 to 1999

<u>Size Range</u>		<u>May 1998</u>		<u>May 1999</u>		<u>One Year Change</u>	
<u>Equal to or more than</u>	<u>Less than</u>	<u>Number of Producers</u>	<u>Percent of Market</u>	<u>Number of Producers</u>	<u>Percent of Market</u>	<u>Number of Producers</u>	<u>Percent of Market</u>
<i>(Pounds)</i>							
	20,000	991	3.87	801	3.23	-190	-0.64
20,000	30,000	1,178	4.60	1,037	4.18	-141	-0.42
30,000	50,000	4,078	15.93	3,752	15.11	-326	-0.82
50,000	70,000	5,069	19.80	4,803	19.34	-266	-0.46
70,000	100,000	6,016	23.50	5,753	23.17	-263	-0.33
100,000	150,000	4,737	18.50	4,814	19.39	77	0.89
150,000	250,000	2,330	9.10	2,498	10.06	168	0.96
250,000	400,000	692	2.70	752	3.03	60	0.33
400,000		510	1.99	619	2.49	109	0.50
Total		25,601		24,829		-772	

^{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).

Table 3 (Continued)
Number and Percent of Producers by Size Range and Year - May 1998 to 1999

Continuous Producers

Size Range		May 1998		May 1999		One Year Change	
Equal to or more than	Less than	Number of Producers	Percent of Market	Number of Producers	Percent of Market	Number of Producers	Percent of Market
(Pounds)							
	20,000	183	1.55	257	2.18	74	0.63
20,000	30,000	351	2.97	333	2.82	-18	-0.15
30,000	50,000	1,485	12.58	1,488	12.61	3	0.03
50,000	70,000	2,248	19.05	2,129	18.04	-119	-1.01
70,000	100,000	2,967	25.14	2,884	24.43	-83	-0.70
100,000	150,000	2,532	21.45	2,537	21.49	5	0.04
150,000	250,000	1,379	11.68	1,435	12.16	56	0.47
250,000	400,000	391	3.31	427	3.62	36	0.31
400,000		267	2.26	313	2.65	46	0.39
Total		11,803		11,803			

In Table 3, May 1999 results were compared with those from May 1998. 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 for all producers and the constant group. In contrast, there was a corresponding decline in the number and percentage of producers in size ranges with milk deliveries of less than 100,000 pounds.

Table 4
Average Milk Deliveries from All Producers by State

State	Average Producer Size		Percent Change in Average Producer Size
	<u>May 1998</u>	<u>May 1999</u>	
	<i>(Pounds)</i>		
Illinois ^{1/}	111,628	112,469	0.75
Iowa	90,878	97,118	6.87
Minnesota	98,459	105,669	7.32
North Dakota	106,168	107,166	0.94
South Dakota	100,771	128,474	27.49
Wisconsin ^{2/}	101,761	109,865	7.96
Market	101,688 ^{3/}	108,933	7.12

Average Producer Milk Deliveries by State
(10 Year Continuous)

State	Average Producer Size		Percent Change in Average Producer Size
	<u>May 1998</u>	<u>May 1999</u>	
	<i>(Pounds)</i>		
Illinois	114,258	114,764	0.44
Iowa	92,999	96,074	3.31
Minnesota	102,867	106,319	3.36
North Dakota	97,300	97,725	0.44
South Dakota	102,415	109,948	7.36
Wisconsin ^{2/}	116,178	121,304	4.41
Market	111,252	115,627	3.93

1/ Includes producer milk from Kentucky and Tennessee.

2/ Includes producer milk from the Michigan Upper Peninsula.

3/ Includes producer milk temporarily pooled on the market from Missouri, New Mexico and Texas.

The average milk delivery for all producers on the two marketing orders in May 1999 was 108,933 pounds, up 7% from May 1998. In the continuous producer group, the average delivery size increased nearly 4% from May 1998 to May 1999. The larger increase for all producers suggests that new producers on the markets were larger, on average, than producers leaving the market.

Deliveries per producer, compared to the previous year, were higher in each of the six states ranging from less than 1% to more than 27%. Using the continuous producer group, average producer size increased

from the previous year in each of the six states. Additionally, variations between states were less and compared to all producer deliveries, the increases in average producer size were lower for both the one-year and ten-year comparisons. Institutional factors also influenced the large changes observed in average producer deliveries for Illinois, Iowa, and South Dakota. Since these states have fewer producers relative to Minnesota and Wisconsin, changes in the composition of producers on the market from those states significantly impacts the average size of producer deliveries.

IV. MAY 1999 AVERAGE PRODUCER SIZE COMPARED TO MAY 1990

Table 5
Average Milk Deliveries from All Producers by State

State	May 1990			May 1999			Percent Change in Average Producer Size
	Number of Farms	Average Producer Size (Pounds)	Percent of Producer Milk	Number of Farms	Average Producer Size (Pounds)	Percent of Producer Milk	
Illinois ^{1/}	1,111	79,555	3.9	642	112,469	2.7	41.37
Iowa	442	74,195	1.5	171	97,118	0.6	30.90
Minnesota	8,116	72,628	26.3	6,437	105,669	25.1	45.49
North Dakota	517	71,774	1.7	218	107,166	0.9	49.31
South Dakota	436	75,820	1.5	266	128,474	1.3	69.45
Wisconsin ^{2/}	18,601	78,456	65.1	17,095	109,865	69.4	40.03
Market	29,223	76,663	^{3/}	24,829	108,933		42.09

Average Producer Milk Deliveries by State
(10 Year Continuous)

State	May 1990			May 1999			Percent Change in Average Producer Size
	Number of Farms	Average Producer Size (Pounds)	Percent of Producer Milk	Number of Farms	Average Producer Size (Pounds)	Percent of Producer Milk	
Illinois	366	96,638	3.5	366	114,764	3.1	18.76
Iowa	94	81,647	0.7	94	96,074	0.7	17.67
Minnesota	3,888	81,308	30.8	3,888	106,319	30.3	30.76
North Dakota	136	85,900	1.1	136	97,725	1.0	13.77
South Dakota	68	94,135	0.6	68	109,948	0.5	16.80
Wisconsin	7,251	89,343	63.2	7,251	121,304	64.4	35.77
Market	11,803	86,849		11,803	115,627		33.14

1/ Includes producer milk from Kentucky and Tennessee.

2/ Includes producer milk from the Michigan Upper Peninsula.

3/ Includes producer milk temporarily pooled on the market from Kansas and Missouri in May 1990.

Another significant change is the decline and shift in the proportion of producer deliveries that would be considered in the middle size ranges. In May 1990, nearly 71% of producers had deliveries within the ranges of 30,000 to 100,000 pounds compared to 62% in 1999 with deliveries of 100,000 to 150,000 pounds. 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. Additionally, there appears to be some stability in the proportion of producers with deliveries to the market of less than 30,000 pounds, which have ranged from about 8-10% of the producers associated with the market since 1990. Detail on numbers and percent of producers by size range for May of each of the years 1990-1999 is shown in Appendix Table A-2.

Average producer size has increased substantially since May 1990, as shown in Table 5. During the ten-year period, the average producer size for the market rose 42%, from 76,663 pounds in May 1990 to 108,933 pounds in May 1999. Increases in the six states ranged from 31% in Iowa to 69% in South Dakota. Detail on average producer delivery by state and for the market for May 1990-1999 is provided in Appendix Table A-3.

V. SUMMARY

May producer deliveries on the former Chicago Regional and Upper Midwest Orders were combined for a ten-year period to examine changes in producer milk deliveries over time. The size of average producer milk deliveries increased nearly 7% from May 1998 to May 1999 and rose 42% since May 1990. Comparisons between May 1990 and 1998 to May 1999 show that the number and percentage of producers in size ranges above 100,000 pounds increased versus a decline in the number and percentage of producers with deliveries below 100,000 pounds.

^{3/} The standard deviation (σ) 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 48,766 pounds in May 1990 to 137,242 pounds in May 1999.

In May 1999, average producer deliveries were up from the previous year in each of the six primary states covered by the procurement area. Increases in average producer size ranged from less than 1% in Illinois to more than 27% in South Dakota. Analysis of the ten-year continuous group of producers showed that average producer deliveries increased from May 1998 in each of the six states from nearly one-half percent to more than 7%.

The median producer size in May 1999 increased 4% from the previous year and was 27% lower than the average producer size. Compared to previous years, the percentage difference between the average and median producer deliveries is gradually increasing. Average producer deliveries for the 11,803 continuous producers that were on the market since May 1990 rose 4% from the previous year and increased 33% from ten years earlier. The median producer size for the continuous group rose nearly 1% and 14% for the one and ten-year periods, respectively. The growing difference between the average and the median suggests that "large" producers, compared to most other 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 better reflect the changes in the size of deliveries for most producers. In contrast, more rapidly rising size of the average producer deliveries reflects the influence of a small, but growing, group of larger producers that were on the Chicago Regional and Upper Midwest Upper Midwest Orders.

The other primary observation is that the distribution of producers in the nine size ranges used in the study is flattening out over time. The proportion of producers with deliveries in the middle size ranges declined while the number of producers in the larger size ranges increased and those in the smaller size ranges have been relatively stable during the ten-year period. A similar flattening and shift in the distribution of producer numbers was also observed in the continuous producer group.

APPENDIX

TABLES

A-1	Number of Producers and Total Milk Deliveries by Size Range, May 1999	A-1
A-2	Number and Percent of Producers by Size Range and Year, May 1990-1999	A-2
A-3	Average Producer Size by State, May 1990-1999	A-4

Table A-1
Number of Producers and Total Milk Deliveries by Size Range
Chicago Regional and Upper Midwest Orders
May 1999

All Producers

<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>			<i>Monthly</i>	<i>Daily</i>
<i>(Pounds)</i>					
	20,000	801	10,674,867	13,327	430
20,000	30,000	1,037	26,157,044	25,224	814
30,000	50,000	3,752	152,819,098	40,730	1,314
50,000	70,000	4,803	288,465,731	60,059	1,937
70,000	100,000	5,753	483,521,392	84,047	2,711
100,000	150,000	4,814	581,608,865	120,816	3,897
150,000	250,000	2,498	464,833,594	186,082	6,003
250,000	400,000	752	231,566,745	307,935	9,933
400,000		619	465,039,899	751,276	24,235
Total		24,829	2,704,687,235	108,933	3,514

Continuous Producers

<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>			<i>Monthly</i>	<i>Daily</i>
<i>(Pounds)</i>					
	20,000	257	3,575,736	13,913	449
20,000	30,000	333	8,333,782	25,026	807
30,000	50,000	1,488	61,223,155	41,145	1,327
50,000	70,000	2,129	128,096,093	60,167	1,941
70,000	100,000	2,884	242,730,660	84,165	2,715
100,000	150,000	2,537	307,381,508	121,159	3,908
150,000	250,000	1,435	269,700,590	187,945	6,063
250,000	400,000	427	130,798,101	306,319	9,881
400,000		313	212,903,237	680,202	21,942
Total		11,803	1,364,742,862	115,627	3,730

Table A-2
Number and Percent of Producers by Size Range and Year - May 1990 to 1999
(Producer Milk on the Market in May During Any Year)

All Producers

<u>Size Range</u>		Number of Producers									
Equal to or more than	Less than	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<i>(Pounds)</i>											
	20,000	913	933	1,142	1,102	1,101	1,079	1,326	1,045	991	801
20,000	30,000	1,517	1,658	1,780	1,616	1,728	1,549	1,727	1,450	1,178	1,037
30,000	50,000	5,904	6,400	6,773	6,122	6,247	5,604	5,700	4,839	4,078	3,752
50,000	70,000	7,419	7,473	7,862	7,522	6,969	6,732	6,450	5,670	5,069	4,803
70,000	100,000	7,343	7,618	8,059	7,921	7,487	7,636	7,038	6,465	6,016	5,753
100,000	150,000	4,351	4,574	4,743	5,071	4,821	5,208	4,700	4,596	4,737	4,814
150,000	250,000	1,495	1,665	1,769	1,959	1,942	2,300	2,136	2,293	2,330	2,498
250,000	400,000	244	274	303	356	381	482	524	588	692	752
400,000		52	65	71	101	137	201	261	388	510	619
Total		29,238	30,660	32,502	31,770	30,813	30,791	29,862	27,334	25,601	24,829

<u>Size Range</u>		Percentage of Producers									
Equal to or more than	Less than	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<i>(Pounds)</i>											
	20,000	3.12	3.04	3.51	3.47	3.57	3.50	4.44	3.82	3.87	3.23
20,000	30,000	5.19	5.41	5.48	5.09	5.61	5.03	5.78	5.30	4.60	4.18
30,000	50,000	20.19	20.87	20.84	19.27	20.27	18.20	19.09	17.70	15.93	15.11
50,000	70,000	25.37	24.37	24.19	23.68	22.62	21.86	21.60	20.74	19.80	19.34
70,000	100,000	25.11	24.85	24.80	24.93	24.30	24.80	23.57	23.65	23.50	23.17
100,000	150,000	14.88	14.92	14.59	15.96	15.65	16.91	15.74	16.81	18.50	19.39
150,000	250,000	5.11	5.43	5.44	6.17	6.30	7.47	7.15	8.39	9.10	10.06
250,000	400,000	0.83	0.89	0.93	1.12	1.24	1.57	1.75	2.15	2.70	3.03
400,000		0.18	0.21	0.22	0.32	0.44	0.65	0.87	1.42	1.99	2.49

Table A-2 (Continued)
Number and Percent of Producers by Size Range and Year - May 1990 to 1999
(Producer Milk on the Market in May of Each Year)

Continuous Producers

<u>Size Range</u>		Number of Producers									
Equal to or more than	Less than	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<i>(Pounds)</i>											
	20,000	135	101	99	97	130	129	152	186	183	257
20,000	30,000	328	314	321	306	348	322	353	349	351	333
30,000	50,000	1,810	1,787	1,753	1,571	1,718	1,498	1,665	1,615	1,485	1,488
50,000	70,000	2,879	2,742	2,708	2,596	2,577	2,454	2,481	2,349	2,248	2,129
70,000	100,000	3,399	3,472	3,495	3,454	3,333	3,261	3,184	3,061	2,967	2,884
100,000	150,000	2,227	2,285	2,288	2,461	2,321	2,544	2,356	2,375	2,532	2,537
150,000	250,000	843	908	926	1,064	1,086	1,229	1,202	1,327	1,379	1,435
250,000	400,000	154	158	170	202	217	260	279	336	391	427
400,000		28	36	43	52	73	106	131	205	267	313

<u>Size Range</u>		Percentage of Producers									
Equal to or more than	Less than	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<i>(Pounds)</i>											
	20,000	1.14	0.86	0.84	0.82	1.10	1.09	1.29	1.58	1.55	2.18
20,000	30,000	2.78	2.66	2.72	2.59	2.95	2.73	2.99	2.96	2.97	2.82
30,000	50,000	15.34	15.14	14.85	13.31	14.56	12.69	14.11	13.68	12.58	12.61
50,000	70,000	24.39	23.23	22.94	21.99	21.83	20.79	21.02	19.90	19.05	18.04
70,000	100,000	28.80	29.42	29.61	29.26	28.24	27.63	26.98	25.93	25.14	24.43
100,000	150,000	18.87	19.36	19.38	20.85	19.66	21.55	19.96	20.12	21.45	21.49
150,000	250,000	7.14	7.69	7.85	9.01	9.20	10.41	10.18	11.24	11.68	12.16
250,000	400,000	1.30	1.34	1.44	1.71	1.84	2.20	2.36	2.85	3.31	3.62
400,000		0.24	0.31	0.36	0.44	0.62	0.90	1.11	1.74	2.26	2.65

Table A-3
Average Producer Size by State
May 1990-1999

	Illinois ^{1/}	Iowa	Minnesota	North Dakota	South Dakota	Wisconsin ^{2/}	Market
1990	79,555	74,195	72,628	71,774	75,820	78,456	76,663
1991	80,691	73,301	72,474	71,756	85,366	79,200	77,296
1992	82,677	78,409	73,058	75,643	83,926	78,815	77,468
1993	84,519	79,357	77,252	80,088	92,018	80,964	80,217
1994	87,093	80,724	78,063	77,798	85,673	81,452	80,699
1995	93,379	82,496	81,810	79,282	87,468	86,990	85,926
1996	92,592	66,980	83,645	83,025	70,777	86,570	85,557
1997	102,441	90,116	91,158	82,817	96,534	93,988	93,360
1998	111,628	90,878	99,459	106,168	100,771	101,761	101,688
1999	112,469	97,118	105,669	107,166	128,474	109,865	108,933

Average Deliveries for Producers Continuously on the Market by State
May 1990-1999

	Illinois	Iowa	Minnesota	North Dakota	South Dakota	Wisconsin ^{2/}	Market
1990	96,638	81,647	81,308	85,900	94,135	89,343	86,849
1991	98,506	80,067	81,413	88,337	94,803	92,578	88,949
1992	99,551	79,214	82,357	93,175	95,173	93,363	89,825
1993	101,400	84,163	87,853	94,817	95,056	96,172	93,476
1994	102,012	84,164	87,720	91,946	95,539	96,399	93,561
1995	105,888	88,262	91,598	85,247	93,723	103,271	99,125
1996	102,139	89,915	92,277	91,032	99,407	102,456	98,844
1997	109,514	92,101	98,554	85,581	97,177	109,628	105,488
1998	114,258	92,999	102,867	97,300	102,415	116,178	111,252
1999	114,764	96,074	106,319	97,725	109,948	121,304	115,627

1/ Includes producer milk from Kentucky and Tennessee.

2/ Includes producer milk from the Michigan Upper Peninsula.