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September 2002

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**The Farm Sector of Delaware Agriculture:
Changes from 1982 - 1997**

**Steven E. Hastings, Professor
Sharon E. Maher, Research Assistant
Peter Z. Acuff, Research Assistant**

September, 2002

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FREC Research Reports

Department of Food and Resource Economics • College of Agriculture and Natural Resources • University of Delaware

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Department of Food and Resource Economics

July 2002

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ABSTRACT

Agriculture contains a vast array of economic activities to produce and provide food, fiber and related products and services. These economic activities can be divided into three sectors: the farm sector, agribusiness and the public sector. Using data from the 1982 and 1997 Censuses of Agriculture, this bulletin documents changes in the farm sector of Delaware agriculture over the 1982 - 1997 time period. It is an update to the Agricultural Experiment Station Bulletin #503, The Farm Sector of Delaware Agriculture: Trends from 1982 – 1992 (Tytus, Hastings and Cole, 1995).

Overall, the analysis finds that the farm sector of Delaware agriculture continues to change. Reasons for the change remain the same as they have been for several decades: continued population growth, emerging technologies, evolving and waning demand for agricultural products, fluctuating domestic and international markets, changing consumer preferences, economic conditions both locally and nationally, increasing environmental concerns and growing competition for critical resources, such as land and water. These factors have affected the farm sector of Delaware throughout the last century and will continue to influence in into the 21st century.

INTRODUCTION

Agriculture consists of a vast array of economic activities that produce and provide food, fiber and related products and services. In 1996, agriculture, often referred to as the food and fiber system, accounted for 17% of total national employment and 13% of national Gross Domestic Product (GDP) (Lipton, Edmondson and Manchester 1998). The economic activities that make up agriculture can be broadly divided into three sectors; the farm sector, agribusiness and the public sector (Seitz, Nelson and Halcrow, 1994). Each sector is responsible for a different function in a chain of activities related to the production, processing, marketing, distribution, regulation and development of food, fiber and related products and services. The farm sector (farming or production agriculture) grows crops and raises livestock. Agribusinesses, the largest component of agriculture, are firms that supply inputs (seed, fertilizer, insurance, etc.) to the farm sector and "...buy, store, and process farm commodities and distribute them to domestic and export markets." (Seitz, Nelson and Halcrow, 1994: 12). The public sector consists of a variety of publicly supported agencies and institutions responsible for a host of agriculture-related services, such as research and development, education, regulation, etc.

This bulletin focuses on changes in the farm sector in Delaware from 1982 – 1997. It is an update to the Agricultural Experiment Station Bulletin #503, *The Farm Sector of Delaware Agriculture: Trends from 1982 – 1992* (Tytus, Hastings and Cole, 1995). While the farm sector of agriculture continues to change in all parts of the United States, continued economic and population growth, suburbanization in many areas, and increasing environmental concerns have created significant impacts in Delaware.

The purpose of this bulletin is to briefly discuss long term trends in the farm sector of

Delaware agriculture and, then, in greater detail, discuss changes in the farm sector of Delaware agriculture from 1982 to 1997. In the latter analysis, a variety of characteristics of the farm sector will be presented. This information will be useful to researchers, Extension personnel, government officials, policy makers and others interested in the farm sector of Delaware agriculture.

DATA SOURCES

The data sources for this study are primarily the 1920 through 1997 Censuses of Agriculture. Like the other economic censuses, the Census of Agriculture is conducted every five years and provides information about the farm sector in individual states and the nation as a whole. While enumeration methods have changed, generally, data are collected via reporting forms mailed to farm operators. The definition of a farm for census purposes has been altered nine times since 1850 (Census of Agriculture, 1982: v). For the 1925 – 1945 Censuses, the definition of a farm included places of 3 or more acres used for agricultural purposes and places of less than 3 acres that produced \$250 of farm products (United States' Bureau of the Census). By 1959, the Census definition of a farm had changed to include places of 10 or more acres with sales of at least \$50 or places that normally expected to have such sales (Census of Agriculture, 1982: v). Also defined as farms were places of less than 10 acres from which \$250 in sales of agricultural products were sold or normally would have been sold. Since 1974, a farm has been defined as "...any place from which \$1,000 or more of agricultural products were produced and sold, or normally would have been sold, during the census year." (Census of Agriculture, 1997: vii).

TRENDS IN DELAWARE AND THE UNITED STATES (Table 1 - Charts 1, 2 and 3)

Between 1920 and 1997, the number of farms in Delaware decreased 76%, from 10,140 to 2,460. The amount of land in farms also decreased 39%, from 945,000 acres to 580,000 acres. Over this time period, the average size of a farm has increased 154%, from 93 acres to 236 acres. Thus, even though there are fewer farms in Delaware today, they are larger farms. The trends in number of farms, land in farms and the size of farms in Delaware are similar to the changes in the United States as a whole. However, since 1920, the number of farms decreased slightly less; land in farms decreased much less and, thus, the size of farms increased more in the United States than in Delaware. The number of farms declined 70%, while the land in farms declined just 3%. The average size of a farm increased 227% since 1920.

Table 1: Farms and Land in Farms in Delaware and the United States, 1920-1997

	1920	1930	1940	1950	1959	1969	1978	1987	1997
Delaware									
Farms (number)	10,140	9,707	8,994	7,448	5,208	3,710	3,398	2,966	2,460
Land in farms: (acres)	944,511	900,815	895,507	851,291	762,526	673,895	669,466	608,245	579,545
Average size of farm (acres)	93	93	100	114	146	182	197	205	236
United States									
Farms (number) (1,000)	6,454	6,295	6,102	5,388	3,711	2,730	2,258	2,088	1,912
Land in farms: (1,000 acres)	958,677	990,112	1,065,114	1,161,420	1,123,508	1,062,893	1,014,777	964,471	931,795
Average size of farm (acres)	149	157	175	216	303	389	449	462	487

Chart 1: Number of Farms in Delaware and the United States, 1920 - 1997

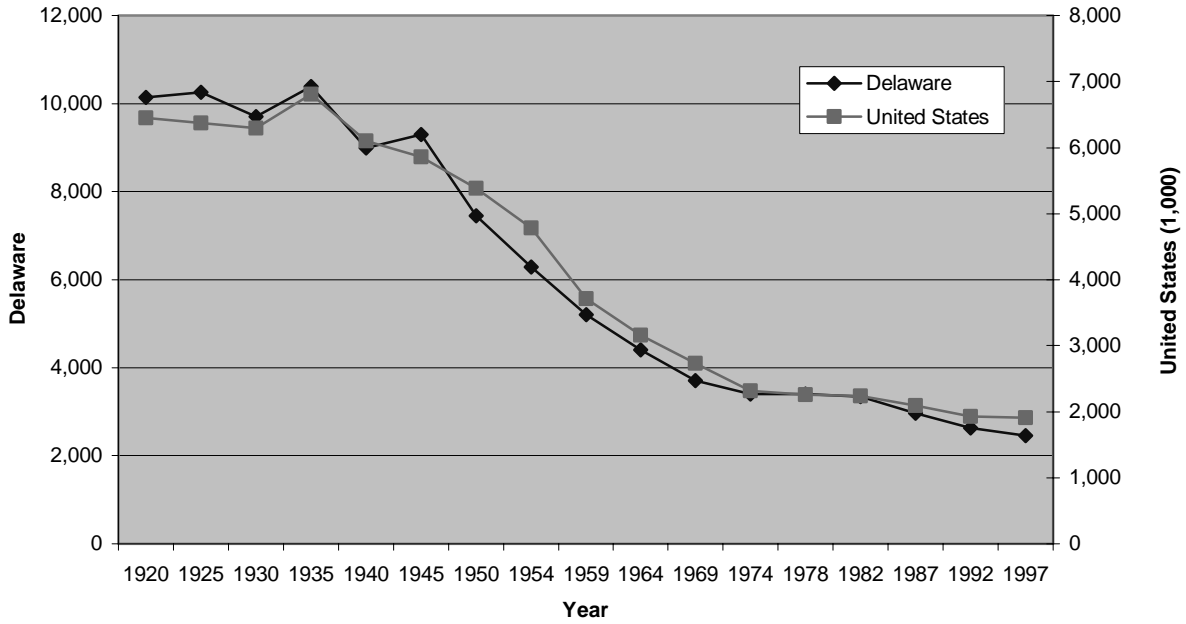


Chart 2: Land in Farms in Delaware and the United States, 1920-1997

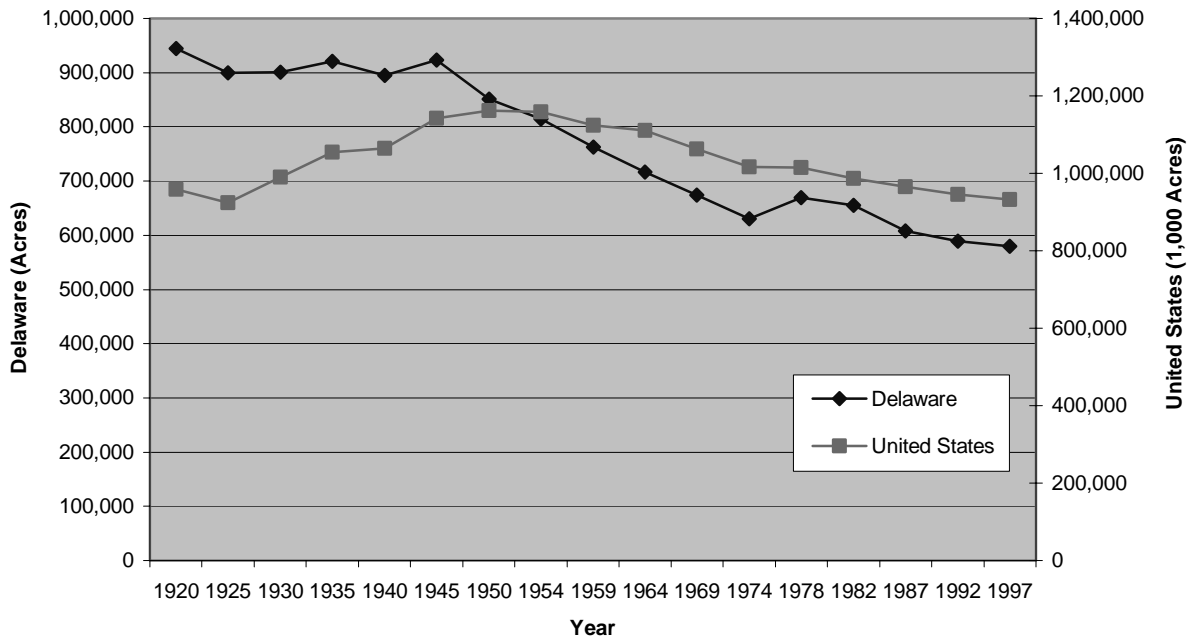
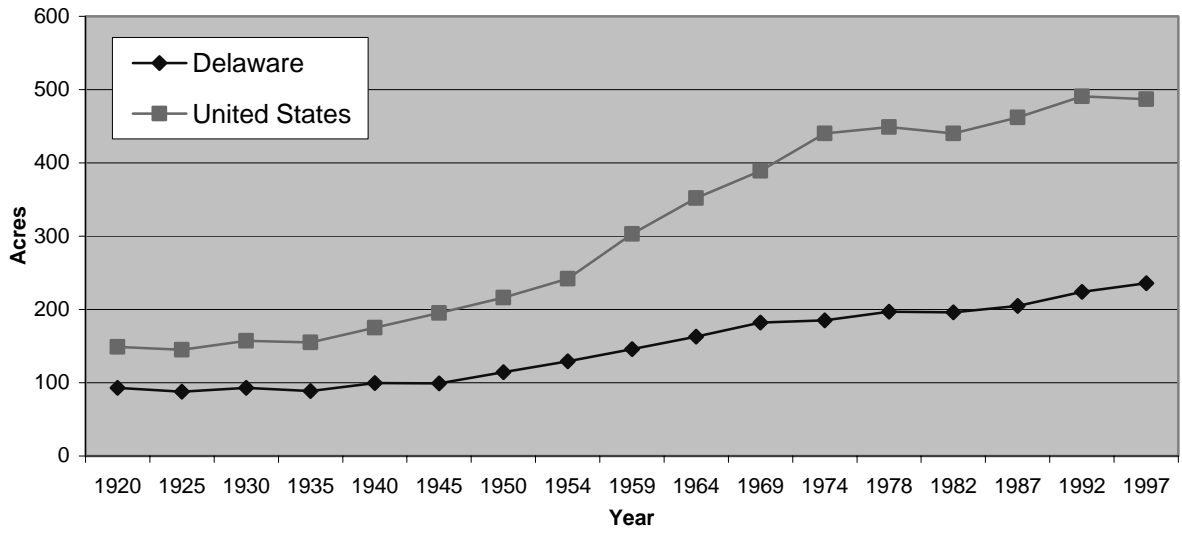


Chart 3: Average Size of Farm in Delaware and the United States, 1920-1997



THE FARM SECTOR IN DELAWARE

The farm sector of agriculture is diverse. It includes small, part-time farming operations of a few acres that produce one or a limited number of crops to multi-enterprise farms managing thousands of acres. Many operations include wholesale and retail activities. Ownership varies from individual owner-operated farms to corporate-owned farms. It includes full-time, part-time and tenant-operated farms. To capture all aspects of this sector is virtually impossible; however, a few key characteristics can be used to see important trends. For this study, a set of several characteristics were selected and grouped into four categories:

- Farms and Farmland Use
- Market Value and Sales of Agricultural Products
- Characteristics of Farm Operators and Organization
- Characteristics of Farm Production

In the following sections, 1982 and 1997 data for Delaware and the three counties in the state, Kent, New Castle and Sussex, are presented in tables and, in some cases, charts. If appropriate, changes for the time period 1982 - 1997 are presented. Discussions focus primarily on 1997 data and the changes from 1982 to 1997.

Farms and Farm Land Use

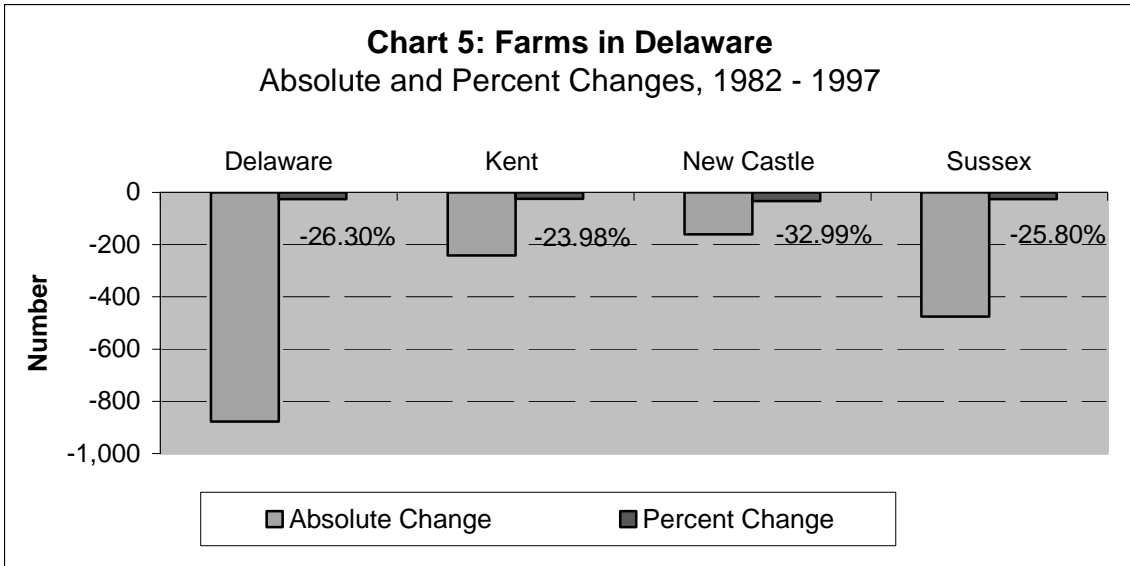
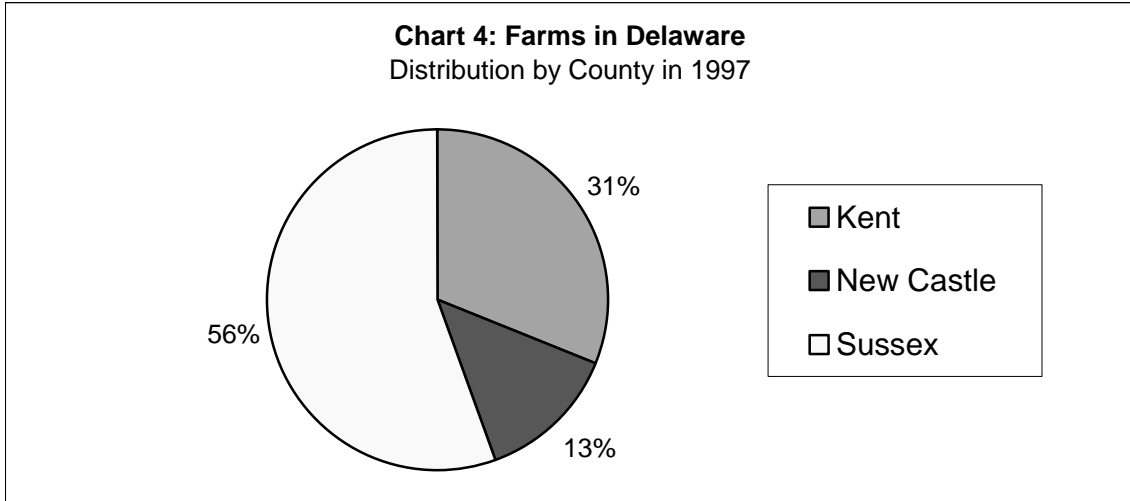
This section discusses changes in number of farms in Delaware and its counties as well as land in farms, the size of farms, value of land and buildings on farms, the use of farmland and the primary products produced.

Number of Farms (Table 2 - Charts 4 and 5)

In 1997, there were 2,460 farms in Delaware. The majority (56%) of the farms were located in Sussex County, followed by Kent (31%) and New Castle (13%) Counties. Statewide, the number of farms declined by 26% (878 farms) since 1982. A decline in the number of farms occurred in all three counties, with over one-half of the statewide decline occurring in Sussex County. In absolute numbers, the greatest decline occurred in Sussex County, where the number of farms declined by 475 over the last 15 years. The largest percent decline was in New Castle County where the number of farms declined by one-third (-33%), followed by Sussex County (-26%) and Kent County (-24%).

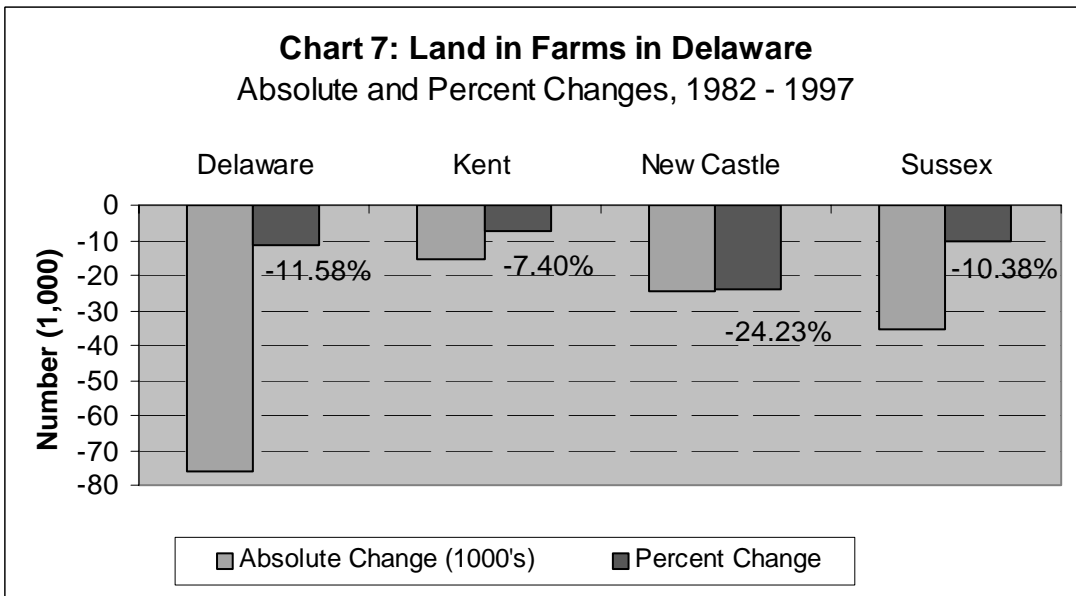
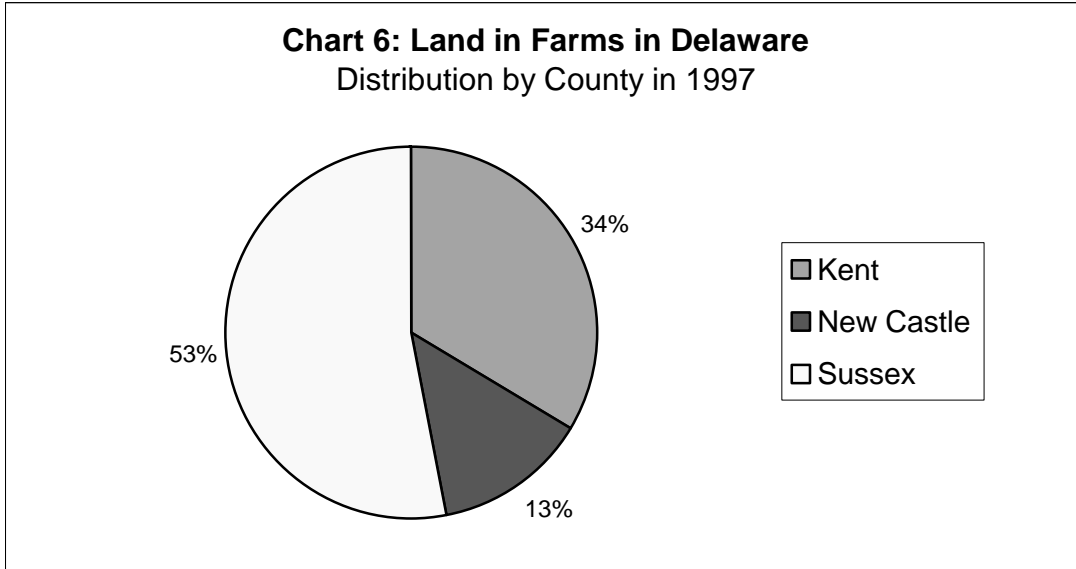
Table 2: Farms and Land in Farms in Delaware - 1982, 1997 and Changes, 1982-1997

	Delaware	Kent	New Castle	Sussex
<u>1997</u>	Number			
Farms	2,460	767	327	1,366
Land in Farms (acres)	579,545	194,554	77,302	307,689
Average Size of Farms (acres)	236	254	236	225
Average Value of Land and Buildings per Farm (dollars)	609,974	646,978	908,126	518,069
<u>1982</u>	Number			
Farms	3,338	1,009	488	1,841
Land in Farms (acres)	655,465	210,109	102,023	343,333
Average Size of Farms (acres)	196	208	209	186
Average Value of Land and Buildings per Farm (dollars)	364,843	367,064	528,150	320,338
<u>1982 - 1997</u>	Absolute Change			
Farms	-878	-242	-161	-475
Land in Farms (acres)	-75,920	-15,555	-24,721	-35,644
Average Size of Farms (acres)	40	46	27	39
Average Value of Land and Buildings per Farm (dollars)	245,131	279,914	379,976	197,731
<u>1982 - 1997</u>	Percent Change			
Farms	-26.30%	-23.98%	-32.99%	-25.80%
Land in Farms (acres)	-11.58%	-7.40%	-24.23%	-10.38%
Average Size of Farms (acres)	20.41%	22.12%	12.92%	20.97%
Average Value of Land and Buildings per Farm (dollars)	67.19%	76.26%	71.94%	61.73%



Land in Farms (Table 2 - Charts 6 and 7)

In 1997, almost 600,000 acres of Delaware land were in farms. As with the number of farms, the majority (53%) of the land in farms was in Sussex County. Mirroring the trend in number of farms, the acres of land devoted to farming in the state declined during the 1982 - 1997 time period from 655,465 acres to 579,545 acres (-12%). The largest percent decline was in New Castle County (-24%), followed by Sussex County (-10%) and Kent County (-7%).



Size of Farms (Table 2)

In 1997, the average size farm in Delaware was 236 acres. With the number of farms declining and the acres of land in farms declining but at a slower rate, the average size of farm increased over the 1982 to 1997 by 40 acres (20%). The percent increase in the size of farms in Kent and Sussex Counties exceeded the percent increase in the state.

Value of Land and Buildings (Table 2)

For Census purposes, the average value of land and buildings per farm is based on estimates made by operators as to the current market value of land and buildings owned, rented or leased from others, and rented or leased to others. Market value is the value the land and buildings would sell for under current market conditions. In Delaware, the average value of land and buildings per farm increased by 67% between 1982 and 1997, from \$364,843 to \$609,974. The percent increase in this value was greatest in Kent County (76%) followed by New Castle County (72%) and Sussex County (62%).

Farm Land Use (Table 3 - Charts 8 and 9)

Delaware farmland is divided into three main uses: cropland, woodland and other land. Cropland is further divided into harvested cropland, pasture for grazing and other cropland. In 1997, 84% of farmland in the state was categorized as cropland, 10.5% as woodland and 5.5% as other land. Four-fifths of the cropland, more than 466,000 acres, was used for harvested crops as opposed to pasture or grazing. The distribution of farmland among the three uses in the three counties was similar to that of the state, except for New Castle County, which had a higher percent of other land compared to woodland.

The acres of cropland in Delaware declined by about 34,000 acres (-6.5%) during the 1982 - 1997 time period. Cropland in New Castle County declined by the greatest percentage amount (-21%), followed by Kent (-4%) and Sussex (-4%) Counties.

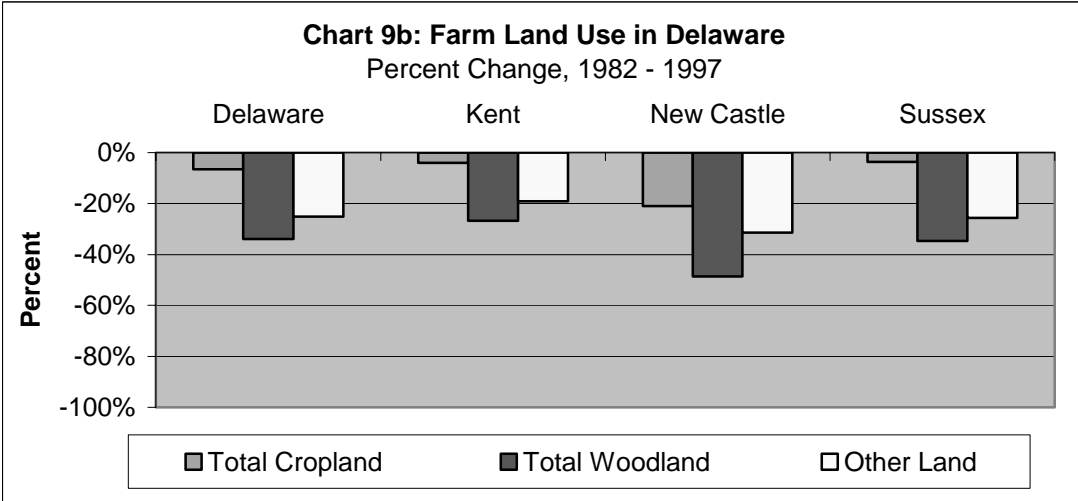
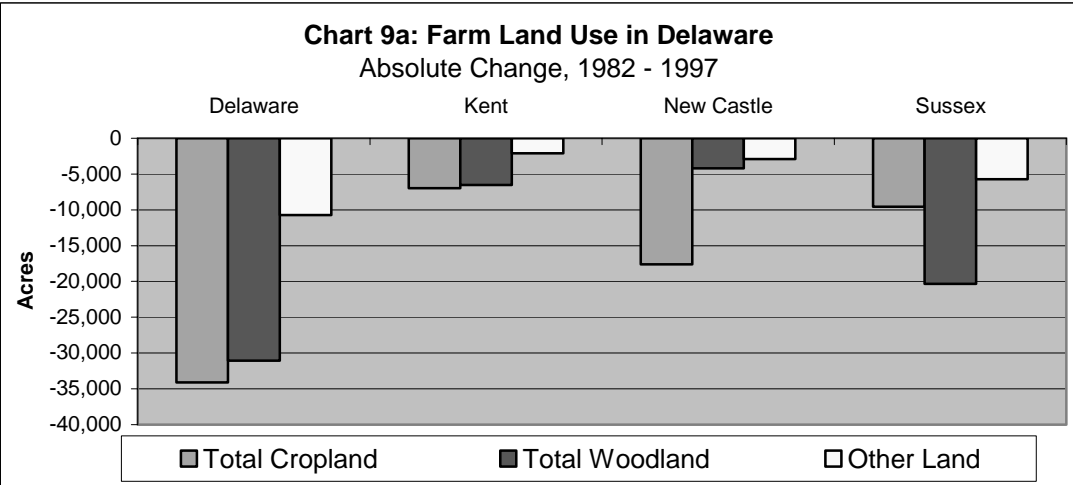
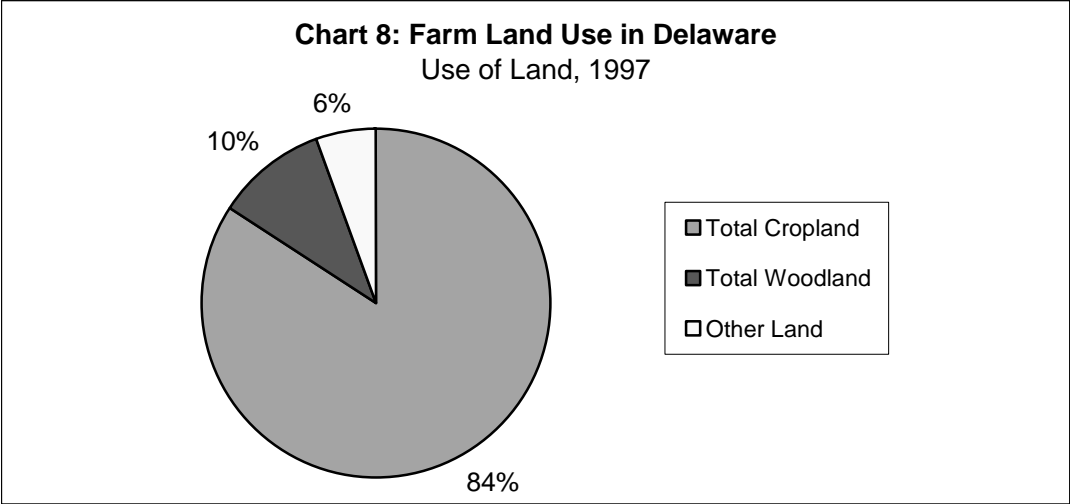
From 1982 to 1997, acres in woodland statewide decreased by 34%. The greatest decline was in New Castle County, where woodland acres fell by 49%. The decline in the other

two counties was not as great.

The category “other land” refers to land not deemed as woodland or cropland. In 1997, this use accounted for 31,904 acres of land in the state. Statewide, acres of “other land” declined by 25% between 1982 and 1997. Acres of “other land” declined in Kent, New Castle and Sussex Counties at rates of 19%, 31% and 26%, respectively.

Table 3: Farm Land Use in Delaware - 1982, 1997 and Changes, 1982 - 1997

	Delaware		Kent		New Castle		Sussex	
<u>1997</u>	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent
Total Cropland	486,981	84.03%	167,846	86.27%	66,506	86.03%	252,629	82.11%
Harvested Cropland	466,555	80.50%	158,370	81.40%	62,436	80.77%	245,749	79.87%
Only Pasture or Grazing	10,691	1.84%	5,156	2.65%	2,275	2.94%	3,260	1.06%
Other Cropland	9,735	1.68%	4,320	2.22%	1,795	2.32%	3,620	1.18%
Total Woodland	60,660	10.47%	17,808	9.15%	4,428	5.73%	38,424	12.49%
Other Land	31,904	5.51%	8,900	4.57%	6,368	8.24%	16,636	5.41%
Total	579,545	100.00%	194,554	100.00%	77,302	100.00%	307,689	100.00%
<u>1982</u>	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent
Total Cropland	521,104	79.50%	174,788	83.19%	84,120	82.45%	262,196	76.37%
Harvested Cropland	499,986	76.28%	167,936	79.93%	77,566	76.03%	254,484	74.12%
Only Pasture or Grazing	12,374	1.89%	4,312	2.05%	4,037	3.96%	4,025	1.17%
Other Cropland	8,744	1.33%	2,540	1.21%	2,517	2.47%	3,687	1.07%
Total Woodland	91,736	14.00%	24,321	11.58%	8,619	8.45%	58,796	17.13%
Other Land	42,625	6.50%	11,000	5.24%	9,284	9.10%	22,341	6.51%
Total	655,465	100.00%	210,109	100.00%	102,023	100.00%	343,333	100.00%
<u>1982 - 1997</u>	Absolute Change							
Total Cropland	-34,123		-6,942		-17,614		-9,567	
Harvested Cropland	-33,431		-9,566		-15,130		-8,735	
Only Pasture or Grazing	-1,683		844		-1,762		-765	
Other Cropland	991		1,780		-722		-67	
Total Woodland	-31,076		-6,513		-4,191		-20,372	
Other Land	-10,721		-2,100		-2,916		-5,705	
<u>1982 - 1997</u>	Percent Change							
Total Cropland		-6.55%		-3.97%		-20.94%		-3.65%
Harvested Cropland		-6.69%		-5.70%		-19.51%		-3.43%
Only Pasture or Grazing		-13.60%		19.57%		-43.65%		-19.01%
Other Cropland		11.33%		70.08%		-28.68%		-1.82%
Total Woodland		-33.88%		-26.78%		-48.63%		-34.65%
Other Land		-25.15%		-19.09%		-31.41%		-25.54%



Farms by Primary Product (Tables 4 and 5 - Charts 10, 11 and 12)

Historically used in all the Economic Censuses, The Standard Industrial Classification (SIC) provides a way of categorizing economic activity by the primary product or service produced in terms of sales. Categorizing farms using the SIC, various crops were the primary product for almost one-half (49%) of the 2,460 farms in Delaware in 1997. Cash grains were the primary crop products for 35% farms in the state, followed by vegetables and melons (4.3%), horticultural specialties (4%), and field crops, except cash grains (3%).

Livestock and related products were the primary products on 51% of the farms in the state. Poultry and eggs were the primary livestock products on one third (34%) of Delaware's farms, followed by other livestock (7%), animal specialties (6%), and dairy (4%).

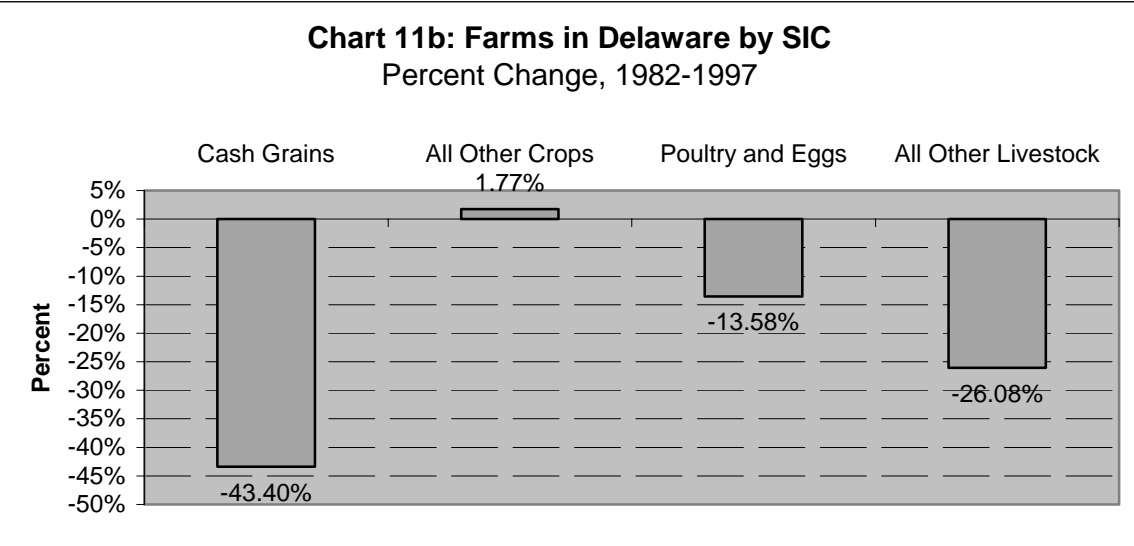
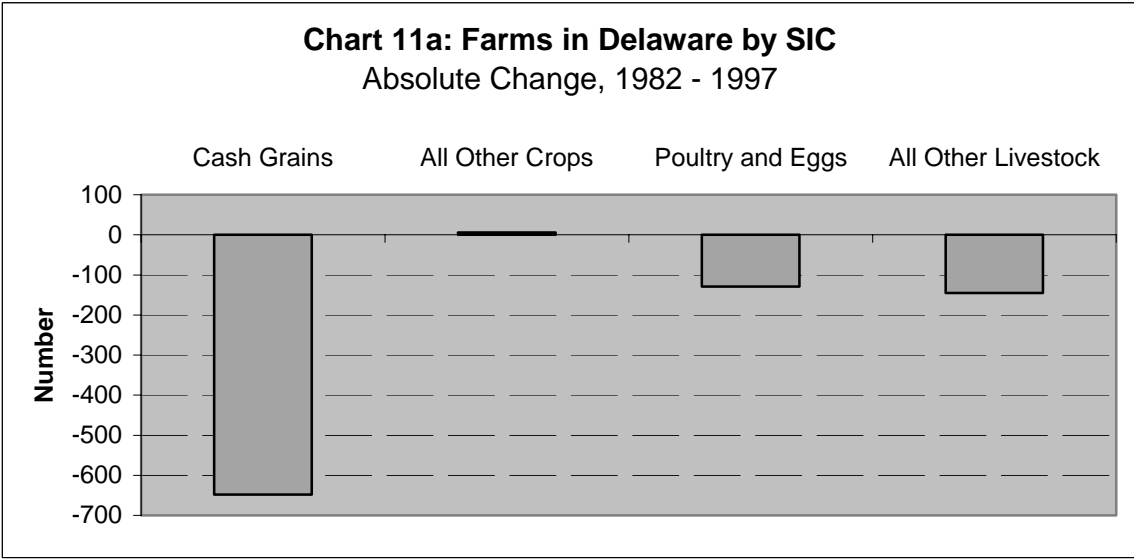
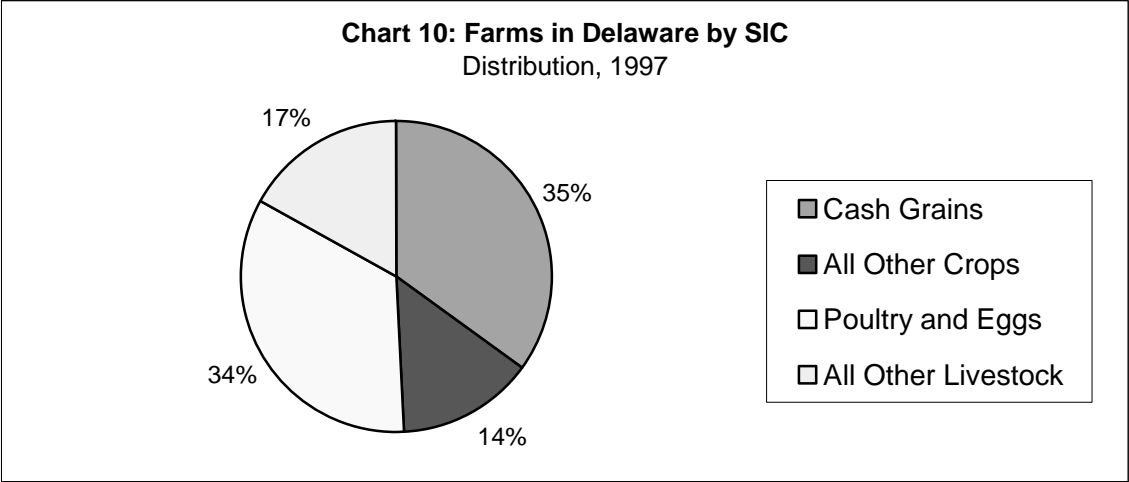
With the number of farms declining, it is not surprising that between 1982 and 1997 the number of farms declined in every SIC category with two exceptions: horticultural specialties, which increased 26% and animal specialties, which increased 4%. Farms with cash grains (the major crop category) as their primary product declined by 43%, while farms with poultry and eggs (the major livestock category) as their primary products declined by 14%.

Table 4: Farms in Delaware by Standard Industrial Classification, 1982, 1997 and Changes, 1982-1997

Delaware	<u>1982</u>		<u>1997</u>	
	Number	Percent	Number*	Percent
Crops (01)	1,832	54.88%	1,190	49.13%
Cash grains (011)	1,493	44.73%	845	34.89%
Field crops, except cash grains (013)	73	2.19%	71	2.93%
Vegetable and melons (016)	107	3.21%	104	4.29%
Fruits and Nuts (017)	22	0.66%	21	0.87%
Horticultural specialties (018)	80	2.40%	101	4.17%
General Farms, primarily crops (019)	57	1.71%	48	1.98%
Livestock (02)	1,506	45.12%	1,232	50.87%
Livestock, except dairy, poultry and animal specialties (021)	249	7.46%	155	6.40%
Dairy Farms (024)	142	4.25%	91	3.76%
Poultry and eggs (025)	950	28.46%	821	33.90%
Animal Specialities (027)	130	3.89%	135	5.57%
General Farms, primarily livestock and animal specialties (029)	35	1.05%	30	1.24%
Totals	3,338	100.00%	2,422	100.00%

<u>1982 - 1997</u>	Absolute Change	Percent Change
Crops (01)	-642	-35.04%
Cash grains (011)	-648	-43.40%
Field crops, except cash grains (013)	-2	-2.74%
Vegetable and melons (016)	-3	-2.80%
Fruits and Nuts (017)	-1	-4.55%
Horticultural specialties (018)	21	26.25%
General Farms, primarily crops (019)	-9	-15.79%
Livestock (02)	-274	-18.19%
Livestock, except dairy, poultry and animal specialties (021)	-94	-37.75%
Dairy Farms (024)	-51	-35.92%
Poultry and eggs (025)	-129	-13.58%
Animal Specialities (027)	5	3.85%
General Farms, primarily livestock and animal specialties (029)	-5	-14.29%
Totals	-916	-27.44%

*1997 total farm count differs between North American Industry Classification System (2,460 farms) and Standard Industrial Classification system (2,422 farms)



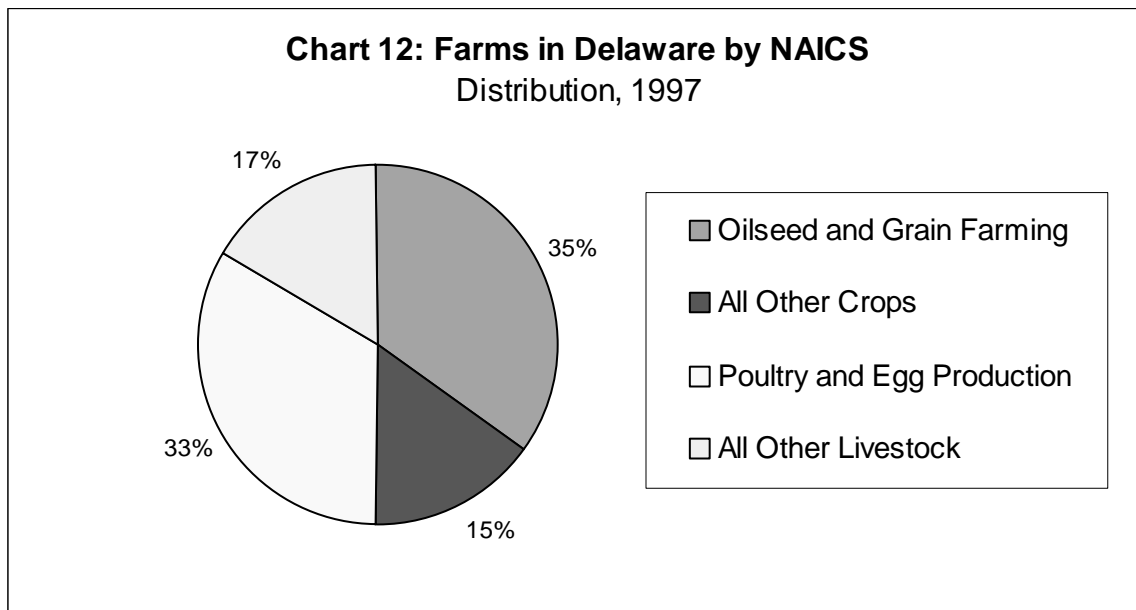
Data were similar according to the North American Industry Classification System (NAICS), which is replacing the SIC as the classification system in the Economic Censuses. Using NAICS, crop and animal production each made up 50% of Delaware's farms in 1997. Oilseed and grain farming made up 35% of crop production, followed by greenhouse, nursery and floriculture production (6%) and vegetable and melon farming (5%). In animal production, poultry and egg production made up 33%, followed by animal aquaculture and other animal production (7%), dairy cattle and milk production (4%) and beef cattle ranching and farming (4%).

Due to the change in the classification system, 1997 county data is only available by (NAICS). In the counties, crop production made up the majority of the farms in Kent and New Castle counties, while in Sussex County animal production made up the majority of farms. Poultry and egg production made up about one-half (49%) of the farms in Sussex County.

Table 5: Farms in Delaware by North American Industry Classification System, 1997

1997	Delaware		Kent		New Castle		Sussex	
	Number*	Percent	Number	Percent	Number	Percent	Number	Percent
Crop Production (111)	1,227	49.88%	418	54.50%	230	70.34%	579	42.39%
Oilseed and Grain Farming (1111)	864	35.12%	300	39.11%	130	39.76%	434	31.77%
Vegetable and Melon Farming (1112)	117	4.76%	31	4.04%	27	8.26%	59	4.32%
Fruit and Tree Nut Farming (1113)	21	0.85%	10	1.30%	3	0.92%	8	0.59%
Greenhouse, Nursery, and Floriculture Production (1114)	140	5.69%	45	5.87%	48	14.68%	47	3.44%
Sugarcane, Hay, and all other Crop Farming (11193, 11194, 11199)	85	3.46%	32	4.17%	22	6.73%	31	2.27%
Animal Production (112)	1,233	50.12%	349	45.50%	97	29.66%	787	57.61%
Beef Cattle Ranching and Farming (112111)	89	3.62%	42	5.48%	17	5.20%	30	2.20%
Cattle Feedlots (112112)	30	1.22%	10	1.30%	18	5.50%	2	0.15%
Dairy Cattle and Milk Production (11212)	91	3.70%	73	9.52%	10	3.06%	8	0.59%
Hog and Pig Farming (1122)	26	1.06%	5	0.65%	2	0.61%	19	1.39%
Poultry and Egg Production (1123)	822	33.41%	143	18.64%	7	2.14%	672	49.19%
Sheep and Goat Farming (1124)	11	0.45%	8	1.04%	3	0.92%	0	0.00%
Animal Aquaculture and other Animal Production (1125, 1129)	164	6.67%	68	8.87%	40	12.23%	56	4.10%
Totals	2,460	100.00%	767	100.00%	327	100.00%	1,366	100.00%

*1997 total farm count differs between North American Industry Classification System (2,460 farms) and Standard Industrial Classification system (2,422 farms)



Market Value and Sales of Agricultural Products

This section discusses the market value of agricultural products in Delaware and its counties. The market value of agricultural products is presented both aggregated and by commodity.

Market Value of Agricultural Products Sold by Farm (Table 6 - Chart 13)

The Census of Agriculture defines the market value of agricultural products as the value of agricultural products sold from the farm. Total sales for the state in 1997 were \$691 million. The average sales per farm were \$280,811. Nearly three-fourths of these sales (\$500 million) were produced by farms in Sussex County, followed by Kent (\$154 million) and New Castle (\$37 million). Among the three counties, Sussex County had the highest average sales per farm (\$366,149).

Delaware farmers experienced an increase in the market value of agricultural products sold in aggregate and on a per-farm basis over the past 15 years. Total agricultural sales increased by 86% in the state. With a declining number of farms, the average sales per farm increased by 153%.

In terms of number of farms, smaller farm operations as measured by sales have been a major part of the farm sector of Delaware agriculture for decades. In 1997, small farms (those with sales less than \$20,000) accounted for almost two-fifths (38%) of the number of farms in the state.¹ Large farms (those with sales greater than \$500,000) accounted for slightly less than one-fifth (18.5%) of the number of farms in the state.

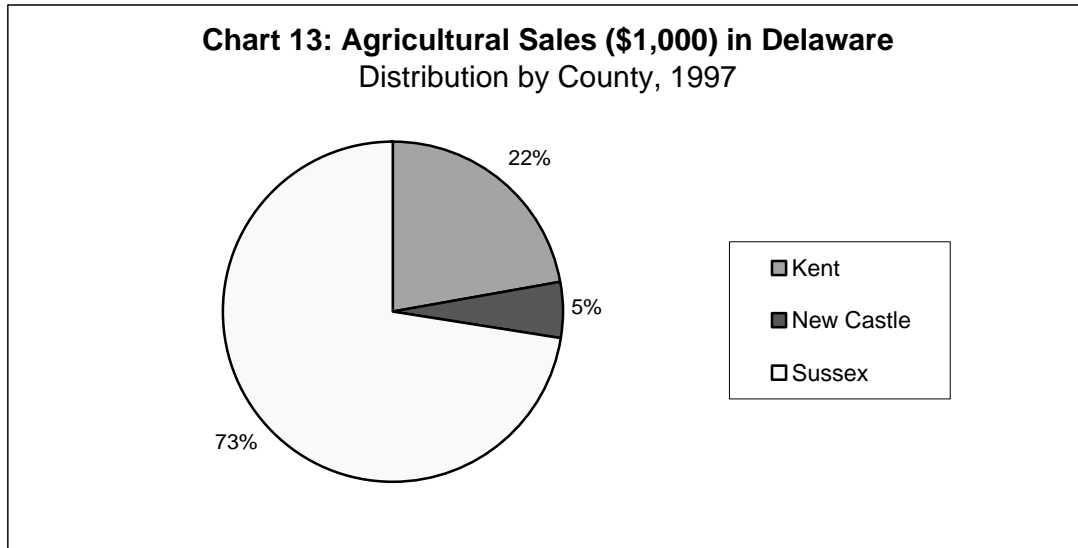
¹ No standard definition of what constitutes a small or large farm exists.

Variation in farm size among the three counties of the state is obvious when the distribution of the number of farms by sales class in 1997 is considered. One-fourth (25%) of the farms in Sussex County had sales over \$500,000. This percentage far exceeds the percentage for Kent and New Castle counties, indicating a predominance of larger farms in Sussex County. In contrast, roughly one-half of the farms in Kent (46%) and New Castle (58%) counties had sales less than \$20,000, indicating smaller farms. In Sussex County, about one-third (29%) of the farms had agricultural sales less than \$20,000.

Table 6: Market Value of Agricultural Products Sold by Farms in Delaware - Farms by Sales Class, 1982 and 1997

	Delaware		Kent		New Castle		Sussex	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1997								
Total Sales (\$1000)	690,794	100.00%	153,691	22.25%	36,943	5.35%	500,160	72.40%
Average Per Farm (dollars)	280,811		200,379		112,976		366,149	
Farms with Sales:								
Less than \$20,000	936	38.05%	353	46.02%	191	58.41%	392	28.70%
\$20,000 to \$39,999	211	8.58%	77	10.04%	34	10.40%	100	7.32%
\$40,000 to \$99,999	235	9.55%	108	14.08%	34	10.40%	93	6.81%
\$100,000 to \$249,999	275	11.18%	69	9.00%	30	9.17%	176	12.88%
\$250,000 to \$499,999	348	14.15%	68	8.87%	22	6.73%	258	18.89%
More than \$500,000	455	18.50%	92	11.99%	16	4.89%	347	25.40%
Total	2,460	100.00%	767	100.00%	327	100.00%	1,366	100.00%

	Delaware		Kent		New Castle		Sussex	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1982								
Total Sales (\$1000)	370,562	100.00%	73,447	19.82%	27,151	7.33%	269,964	72.85%
Average Per Farm (dollars)	111,013		72,792		55,638		146,640	
Farms with Sales:								
Less than \$20,000	1,531	45.87%	556	55.10%	292	59.84%	683	37.10%
\$20,000 to \$39,999	345	10.34%	152	15.06%	49	10.04%	144	7.82%
\$40,000 to \$99,999	440	13.18%	126	12.49%	66	13.52%	248	13.47%
\$100,000 to \$249,999	601	18.00%	93	9.22%	59	12.09%	449	24.39%
\$250,000 or more	421	12.61%	82	8.13%	22	4.51%	317	17.22%
Total	3,338	100.00%	1,009	100.00%	488	100.00%	1,841	100.00%



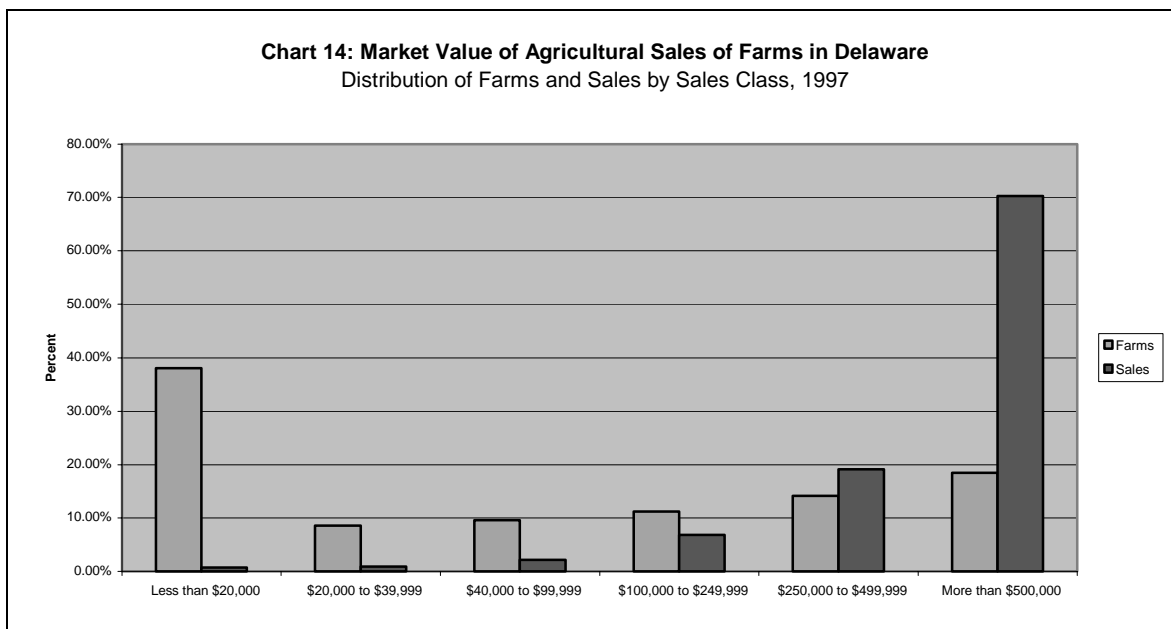
Market Value of Agricultural Products Sold by Sales Class (Table 7 - Chart 14)

Quite a different view of the structure of Delaware farming emerges if the value of agricultural sales instead of the number of farms is allocated among sales classes. Statewide, larger farms (sales of \$500,000 and greater) accounted for 70% of agricultural sales. Smaller farms (with sales less than \$20,000) produced less than 1% of agricultural sales. Thus, in 1997, 19% of the farms in Delaware produced almost three-fourths of the agricultural output as measured by sales. On the other end of the scale, about 40% of the farms produced about 1% of the output. This pattern is true in each of the three counties as well as the state.

Table 7: Market Value of Agricultural Products Sold by Farms in Delaware - Sales by Sales Class, 1982 and 1997

<u>1997</u>	Delaware		Kent		New Castle		Sussex	
	Total Sales (\$1,000)	Percent	Total Sales (\$1,000)	Percent	Total Sales (\$1,000)	Percent	Total Sales (\$1,000)	Percent
Farms with Sales:								
Less than \$20,000	5,160	0.75%	1,994	1.30%	860	2.33%	2,306	0.46%
\$20,000 to \$39,999	6,022	0.87%	2,253	1.47%	925	2.50%	2,843	0.57%
\$40,000 to \$99,999	14,974	2.17%	7,091	4.61%	2,117	5.73%	5,765	1.15%
\$100,000 to \$249,999	47,052	6.81%	12,155	7.91%	4,725	12.79%	30,172	6.03%
\$250,000 to \$499,999	132,457	19.17%	25,718	16.73%	7,694	20.83%	99,045	19.80%
More than \$500,000	485,130	70.23%	104,479	67.98%	20,622	55.82%	360,028	71.98%
Total	690,794	100.00%	153,691	100.00%	36,943	100.00%	500,160	100.00%

<u>1982</u>	Delaware		Kent		New Castle		Sussex	
	Total Sales (\$1,000)	Percent	Total Sales (\$1,000)	Percent	Total Sales (\$1,000)	Percent	Total Sales (\$1,000)	Percent
Farms with Sales:								
Less than \$20,000	9,187	2.48%	3,489	4.75%	1,547	5.70%	4,152	1.54%
\$20,000 to \$39,999	9,936	2.68%	4,364	5.94%	1,427	5.26%	4,145	1.54%
\$40,000 to \$99,999	29,688	8.01%	8,482	11.55%	4,534	16.70%	16,672	6.18%
\$100,000 to \$249,999	98,409	26.56%	14,964	20.37%	9,817	36.15%	73,628	27.27%
\$250,000 or more	223,341	60.27%	42,148	57.39%	9,828	36.19%	171,365	63.48%
Total	370,561	100.00%	73,447	100.00%	27,153	100.00%	269,962	100.00%



Agricultural Sales by Commodity (Table 8 - Chart 15)

Crops, including nursery and greenhouse products, accounted for one-fourth (25%) of the agricultural sales from Delaware farms in 1997, while livestock, poultry and related-products accounted for the remaining 75%. Poultry and poultry products generated sales of \$479 million, which was 69% of all agricultural sales in the state. The dominant crop(s) were grains with sales of \$107 million.

Poultry and poultry products were the dominant agricultural products in both Sussex and Kent counties. In Sussex County, these products accounted for 80% of agricultural sales. Poultry accounted for 47% of the sales in Kent County. The dominant agricultural product in New Castle County, grains, accounted for 37% of agricultural sales.

From 1982 to 1997, the importance of poultry and poultry products as measured by the percent of total sales increased from 60% to 69% of sales in the state. This is particularly true in Sussex County. Statewide, the importance of grains declined from 20% of sales in 1982 to 15% in 1997. This is true in each county as well. Nursery and greenhouse products increased as a percent of sales statewide and in each county, most noticeably in New Castle County, where they increased from 18% to 24% by 1997. Vegetables, sweet corn and melons continued to represent a consistent percentage of sales from 1982 to 1997.

Table 8: Agricultural Sales by Commodity Group in Delaware, 1982 and 1997

	Delaware		Kent		New Castle		Sussex	
	Sales (\$1,000)	Percent	Sales (\$1,000)	Percent	Sales (\$1,000)	Percent	Sales (\$1,000)	Percent
1997								
Crops, including Nursery and Greenhouse Products								
Grains	174,845	25.31%	62,597	40.73%	26,343	71.31%	85,905	17.18%
Corn for grain	106,929	15.48%	35,376	23.02%	13,730	37.17%	57,823	11.56%
Wheat	41,018	5.94%	10,229	6.66%	5,587	15.12%	25,203	5.04%
Soybeans	15,160	2.19%	5,482	3.57%	2,680	7.25%	6,998	1.40%
Sorghum for grain	44,801	6.49%	17,319	11.27%	5,251	14.21%	22,230	4.44%
Barley	783	0.11%	178	0.12%	0	0.00%	605	0.12%
Oats	4,613	0.67%	(D)		(D)		(D)	
Other grains	10	0.00%	(D)		(D)		(D)	
Hay, silage and field seeds	544	0.08%	10	0.01%	0	0.00%	534	0.11%
Vegetables, sweet corn & melons	1,332	0.19%	492	0.32%	(D)		(D)	
Fruit, nuts and berries	38,591	5.59%	16,672	10.85%	875	2.37%	21,043	4.21%
Nursery/greenhouse products	1,993	0.29%	111	0.07%	(D)		(D)	
Other crops	16,806	2.43%	3,476	2.26%	8,690	23.52%	4,640	0.93%
	9,193	1.33%	6,470	4.21%	2,550	6.90%	173	0.03%
Livestock, poultry and their products	515,949	74.69%	91,094	59.27%	10,601	28.70%	414,255	82.82%
Poultry and poultry products	478,938	69.33%	70,647	45.97%	7,348	19.89%	400,943	80.16%
Dairy products	19,260	2.79%	11,733	7.63%	1,904	5.15%	5,622	1.12%
Cattle and calves	9,457	1.37%	7,188	4.68%	506	1.37%	1,763	0.35%
Hogs and pigs	6,552	0.95%	1,080	0.70%	3	0.01%	5,469	1.09%
Sheep, lambs, and wool	68	0.01%	28	0.02%	(D)		(D)	
Other livestock and their products	1,675	0.24%	417	0.27%	(D)		(D)	
Total	690,794	100.00%	153,691	100.00%	36,943	100.00%	500,160	100.00%

(D) - data cannot be disclosed due to confidentiality

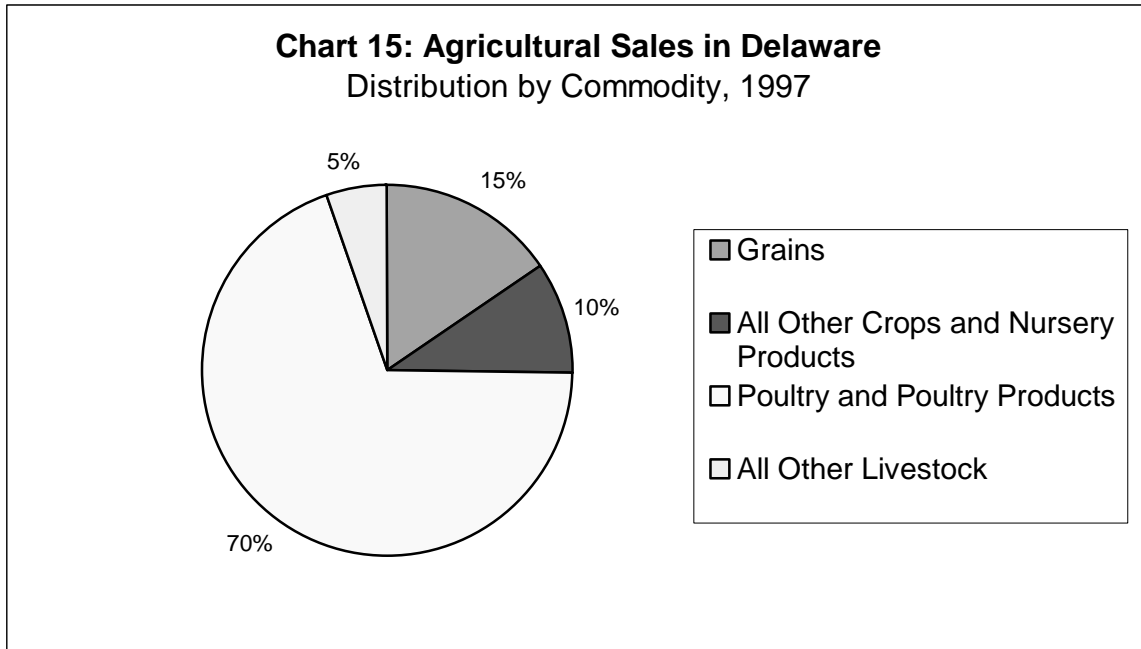
NA - data not available

Table 8: Continued

	Delaware		Kent		New Castle		Sussex	
	Sales (\$1,000)	Percent	Sales (\$1,000)	Percent	Sales (\$1,000)	Percent	Sales (\$1,000)	Percent
1982								
Crops, including Nursery and Greenhouse Products								
Grains	110,276	29.76%	41,335	56.28%	20,385	75.08%	48,556	17.99%
Corn for grain	74,889	20.21%	23,940	32.59%	13,144	48.41%	37,805	14.00%
Wheat	30,844	8.32%	10,918	14.87%	8,295	30.55%	11,632	4.31%
Soybeans	6,654	1.80%	2,319	3.16%	672	2.48%	3,663	1.36%
Sorghum for grain	34,109	9.20%	9,147	12.45%	3,936	14.50%	21,026	7.79%
Barley	8	0.00%	(D)		0	0.00%	(D)	
Oats	NA		NA		NA		NA	
Other grains	23	0.01%	(D)		6	0.02%	(D)	
Hay, silage and field seeds	3,251	0.88%	1,542	2.10%	236	0.87%	1,473	0.55%
Vegetables, sweet corn & melons	901	0.24%	240	0.33%	245	0.90%	416	0.15%
Fruit, nuts and berries	16,929	4.57%	8,767	11.94%	556	2.05%	7,606	2.82%
Nursery/greenhouse products	2,320	0.63%	(D)		59	0.22%	(D)	
Other crops	7,984	2.15%	1,147	1.56%	4,996	18.40%	1,840	0.68%
	7,252	1.96%	(D)		1,385	5.10%	(D)	
Livestock, poultry and their products	260,286	70.24%	32,112	43.72%	6,766	24.92%	221,408	82.01%
Poultry and poultry products	220,963	59.63%	(D)		(D)		200,880	74.41%
Dairy products	15,571	4.20%	8,502	11.58%	3,497	12.88%	3,573	1.32%
Cattle and calves	12,311	3.32%	3,136	4.27%	1,063	3.92%	8,112	3.00%
Hogs and pigs	10,208	2.75%	1,609	2.19%	290	1.07%	8,308	3.08%
Sheep, lambs, and wool	26	0.01%	5	0.01%	11	0.04%	10	0.00%
Other livestock and their products	1,206	0.33%	(D)		(D)		525	0.19%
Total	370,562	100.00%	73,447	100.00%	27,151	100.00%	269,964	100.00%

(D) - data cannot be disclosed due to confidentiality

NA - data not available



Characteristics of Farm Operators and Farm Organization

Farm operators in Delaware vary by tenure of operators on the farm, residence on the farm, principal occupation, and many other characteristics. This section details those characteristics, as well as farm organization.

Tenure of Operators (Table 9 - Chart 16)

In 1997, 62% of Delaware farm operators were full owners while 29% were part owners of the farm they operated. The remaining 236 (10%) were tenants. The distribution of operators among full-time, part-time and tenants among the three counties is fairly consistent. The number of full owners decreased 22%, part owners declined 29% and tenants declined 40%, respectively since 1982.

Table 9: Characteristics of Farm Operators in Delaware - 1982, 1997 and Changes, 1982 - 1997

1997	Delaware		Kent		New Castle		Sussex	
Number of Farms	2,460		767		327		1,366	
Tenure of Operators								
Full Owners	1,519	61.75%	453	59.06%	195	59.63%	871	63.76%
Part Owners	705	28.66%	227	29.60%	83	25.38%	395	28.92%
Tenants	236	9.59%	87	11.34%	49	14.98%	100	7.32%
Residence of Farm Operators								
On-farm operated	1,777	72.24%	549	71.58%	257	78.59%	971	71.08%
Not on-farm operated	391	15.89%	114	14.86%	56	17.13%	221	16.18%
Not reported	292	11.87%	104	13.56%	14	4.28%	174	12.74%
Operators by Principal Occupation								
Farming	1,497	60.85%	459	59.84%	169	51.68%	869	63.62%
Other	963	39.15%	308	40.16%	158	48.32%	497	36.38%
Operators by Days Worked Off Farm								
None	1,149	46.71%	351	45.76%	163	49.85%	635	46.49%
Any	1,097	44.59%	349	45.50%	156	47.71%	592	43.34%
1 to 49 days	117	4.76%	52	6.78%	15	4.59%	50	3.66%
50 to 99 days	54	2.20%	18	2.35%	4	1.22%	32	2.34%
100 to 149 days	60	2.44%	15	1.96%	4	1.22%	41	3.00%
150 to 199 days	122	4.96%	37	4.82%	18	5.50%	67	4.90%
200 days or more	744	30.24%	227	29.60%	115	35.17%	402	29.43%
Not reported	214	8.70%	67	8.74%	8	2.45%	139	10.18%
Operators by Years on Present Farm								
2 years or less	85	3.46%	24	3.13%	17	5.20%	44	3.22%
3 or 4 years	155	6.30%	47	6.13%	22	6.73%	86	6.30%
5 to 9 years	298	12.11%	97	12.65%	42	12.84%	159	11.64%
10 years or more	1,420	57.72%	437	56.98%	207	63.30%	776	56.81%
Not reported	502	20.41%	162	21.12%	39	11.93%	301	22.04%
Average Age	54.0		53.2		56.3		53.9	

Table 9: Continued

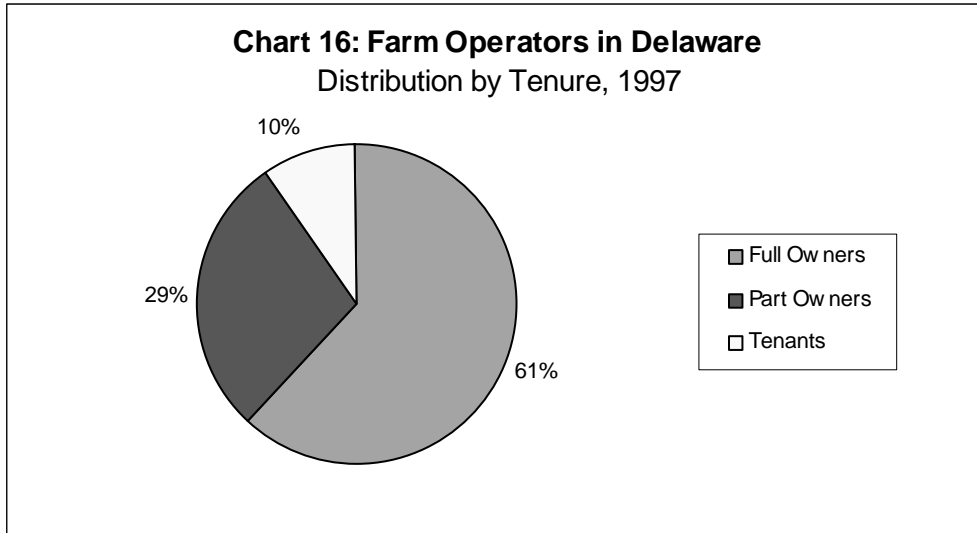
	Delaware		Kent		New Castle		Sussex	
<u>1982</u>								
Number of Farms	3,338		1,009		488		1,841	
Tenure of Operators								
Full Owners	1,951	58.45%	559	55.40%	265	54.30%	1,127	61.22%
Part Owners	996	29.84%	309	30.62%	123	25.20%	564	30.64%
Tenants	391	11.71%	141	13.97%	100	20.49%	150	8.15%
Residence of Farm Operators								
On-farm operated	2,405	72.05%	755	74.83%	336	68.85%	1,314	71.37%
Not on-farm operated	506	15.16%	148	14.67%	113	23.16%	245	13.31%
Not reported	427	12.79%	106	10.51%	39	7.99%	282	15.32%
Operators by Principal Occupation								
Farming	1,956	58.60%	598	59.27%	277	56.76%	1,081	58.72%
Other	1,382	41.40%	411	40.73%	211	43.24%	760	41.28%
Operators by Days Worked Off Farm								
None	1,367	40.95%	384	38.06%	223	45.70%	760	41.28%
Any	1,629	48.80%	535	53.02%	232	47.54%	862	46.82%
1 to 49 days	185	5.54%	71	7.04%	22	4.51%	92	5.00%
50 to 99 days	70	2.10%	30	2.97%	9	1.84%	31	1.68%
100 to 149 days	100	3.00%	30	2.97%	8	1.64%	62	3.37%
150 to 199 days	145	4.34%	44	4.36%	20	4.10%	81	4.40%
200 days or more	1,129	33.82%	360	35.68%	173	35.45%	596	32.37%
Not reported	342	10.25%	90	8.92%	33	6.76%	219	11.90%
Operators by Years on Present Farm								
2 years or less	177	5.30%	77	7.63%	19	3.89%	81	4.40%
3 or 4 years	304	9.11%	100	9.91%	59	12.09%	145	7.88%
5 to 9 years	499	14.95%	149	14.77%	82	16.80%	368	19.99%
10 years or more	1,559	46.70%	458	45.39%	245	50.20%	856	46.50%
Not reported	799	23.94%	225	22.30%	83	17.01%	391	21.24%
Average Age	50.6		48.9		52.6		51.0	

Table 9: Continued

	Delaware	Kent	New Castle	Sussex
<u>1982 - 1997</u>	Absolute Change			
Number of Farms	-878	-242	-161	-475
Tenure of Operators				
Full Owners	-432	-106	-70	-256
Part Owners	-291	-82	-40	-169
Tenants	-155	-54	-51	-50
Residence of Farm Operators				
On-farm operated	-628	-206	-79	-343
Not on-farm operated	-115	-34	-57	-24
Not reported	-135	-2	-25	-108
Operators by Principal Occupation				
Farming	-459	-139	-108	-212
Other	-419	-103	-53	-263
Operators by Days Worked Off Farm				
None	-218	-33	-60	-125
Any	-532	-186	-76	-270
1 to 49 days	-68	-19	-7	-42
50 to 99 days	-16	-12	-5	1
100 to 149 days	-40	-15	-4	-21
150 to 199 days	-23	-7	-2	-14
200 days or more	-385	-133	-58	-194
Not reported	-128	-23	-25	-80
Operators by Years on Present Farm				
2 years or less	-92	-53	-2	-37
3 or 4 years	-149	-53	-37	-59
5 to 9 years	-201	-52	-40	-209
10 years or more	-139	-21	-38	-80
Not reported	-297	-63	-44	-90
Average Age	3.4	4.3	3.7	2.9

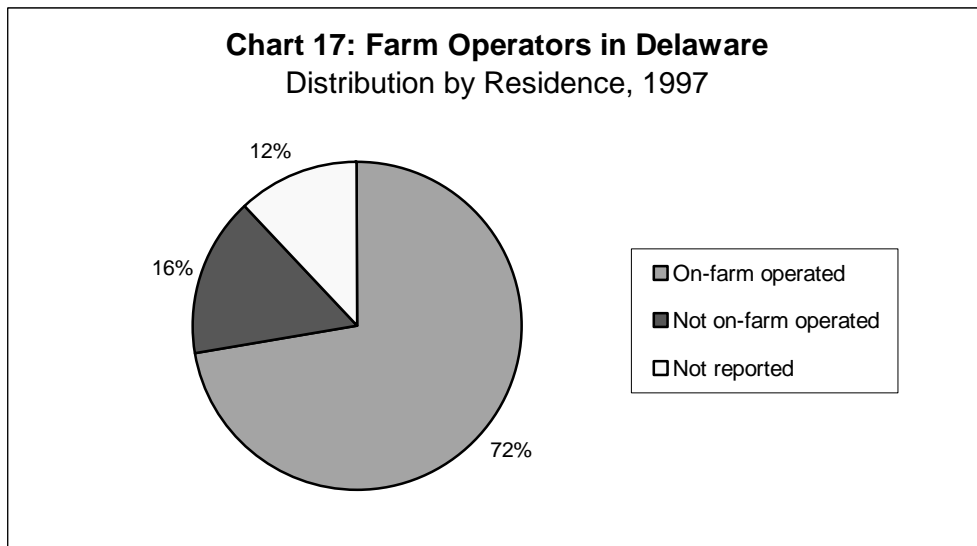
Table 9: Continued

<u>1982 - 1997</u>	Delaware	Kent	New Castle	Sussex
	Percent Change			
Number of Farms	-26.30%	-23.98%	-32.99%	-25.80%
Tenure of Operators				
Full Owners	-22.14%	-18.96%	-26.42%	-22.72%
Part Owners	-29.22%	-26.54%	-32.52%	-29.96%
Tenants	-39.64%	-38.30%	-51.00%	-33.33%
Residence of Farm Operators				
On-farm operated	-26.11%	-27.28%	-23.51%	-26.10%
Not on-farm operated	-22.73%	-22.97%	-50.44%	-9.80%
Not reported	-31.62%	-1.89%	-64.10%	-38.30%
Operators by Principal Occupation				
Farming	-23.47%	-23.24%	-38.99%	-19.61%
Other	-30.32%	-25.06%	-25.12%	-34.61%
Operators by Days Worked Off Farm				
None	-15.95%	-8.59%	-26.91%	-16.45%
Any	-32.66%	-34.77%	-32.76%	-31.32%
1 to 49 days	-36.76%	-26.76%	-31.82%	-45.65%
50 to 99 days	-22.86%	-40.00%	-55.56%	3.23%
100 to 149 days	-40.00%	-50.00%	-50.00%	-33.87%
150 to 199 days	-15.86%	-15.91%	-10.00%	-17.28%
200 days or more	-34.10%	-36.94%	-33.53%	-32.55%
Not reported	-37.43%	-25.56%	-75.76%	-36.53%
Operators by Years on Present Farm				
2 years or less	-51.98%	-68.83%	-10.53%	-45.68%
3 or 4 years	-49.01%	-53.00%	-62.71%	-40.69%
5 to 9 years	-40.28%	-34.90%	-48.78%	-56.79%
10 years or more	-8.92%	-4.59%	-15.51%	-9.35%
Not reported	-37.17%	-28.00%	-53.01%	-23.02%
Average Age	6.7%	8.8%	7.0%	5.7%



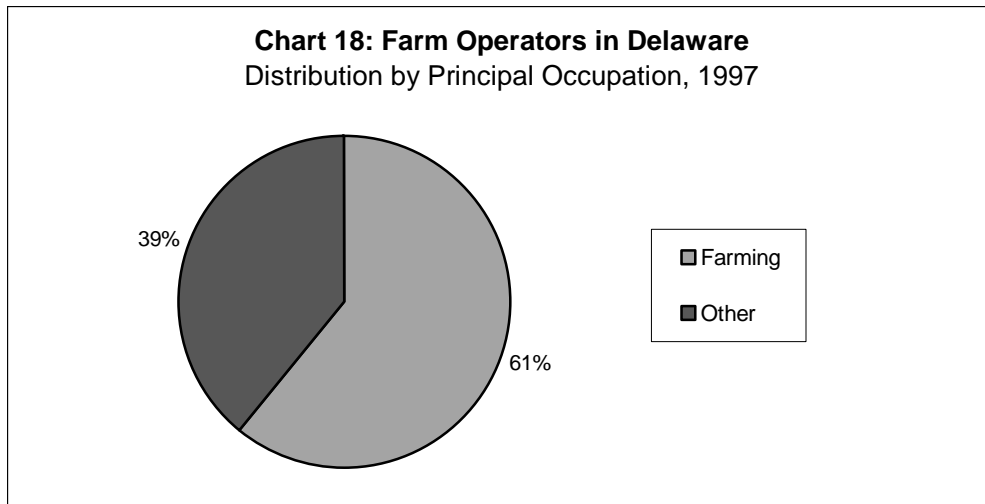
Residence of Operators (Table 9 - Chart 17)

Almost three-fourths of the farm operators in the state reside on the farm. In 1997, on-farm operators operated 72% of farms and 16% were operated by off-farm operators. This pattern was consistent across the three counties.



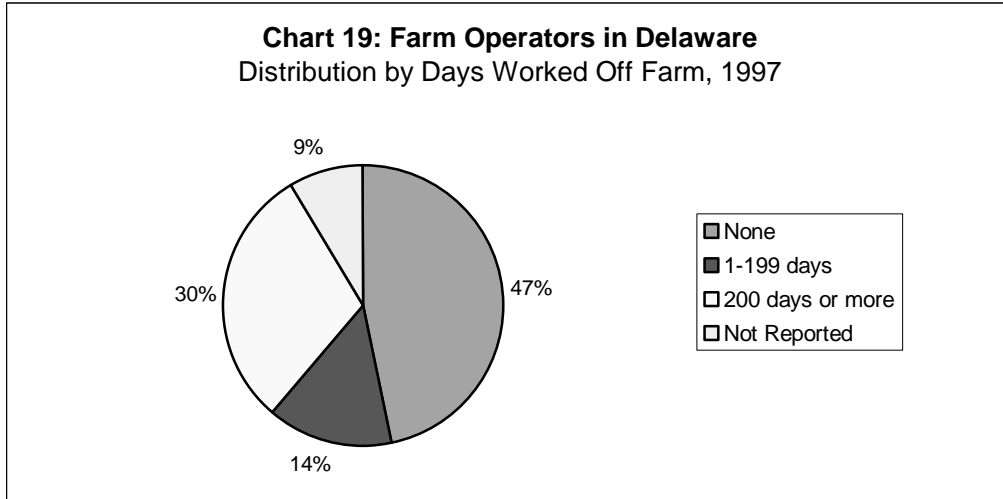
Principal Occupation (Table 9 - Chart 18)

Of the 2,460 farmers in Delaware in 1997, 61% reported that farming was their principal occupation. This pattern was consistent across the three counties. As a percent of the total, the number of operators with farming as their principal occupation has stayed fairly constant over the last fifteen years.



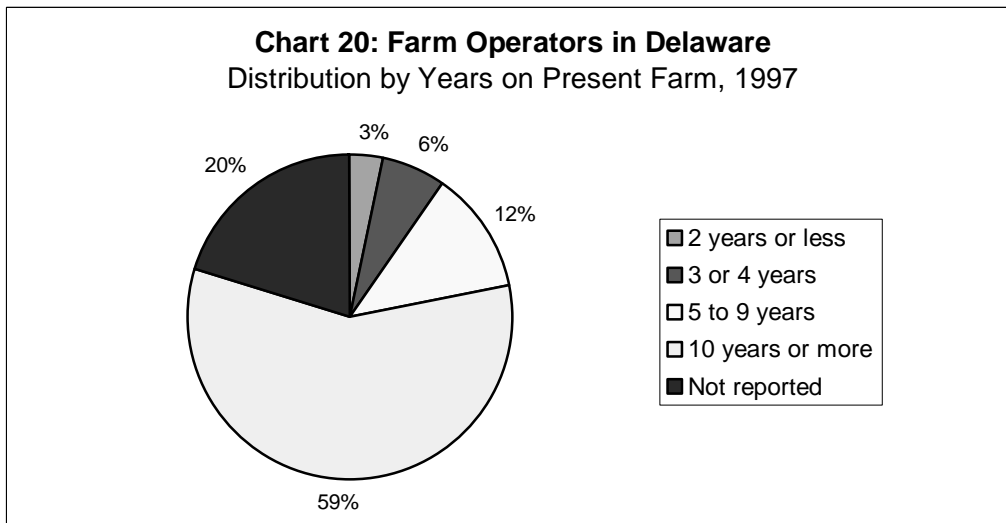
Days Worked Off the Farm (Table 9 - Chart 19)

Delaware farm operators routinely supplement farm income with income from off-farm jobs. In 1997, almost one-half (45%) of the farm operators in the state worked off the farm. Almost one-third (30%) worked off the farm more than 200 days during the year. The practice of working off the farm is typical of farm operators in all three counties.



Years on Present Farm (Table 9 - Chart 20)

Delaware farm operators tend to be long-term farm operators with more than one-half (58%) of the total number of farms reportedly operating the present farm for ten years or more. Only 3.4% reported operating the same farm for two years or less. This pattern was again typical across the three counties.



Average Age of Operators (Table 9)

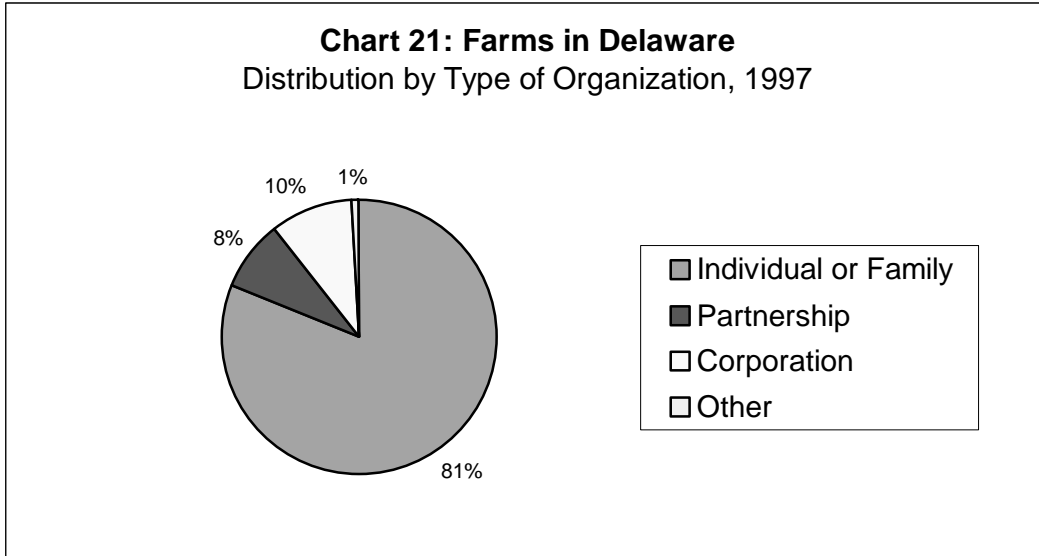
In 1997, the average age of farm operators in the state was 54 years. New Castle County operators had the highest average age of operators among the counties, with an average age of 56. Over the last fifteen years, the average age of operators in the state has increased by 3 years.

Organization of Farms (Table 10 - Chart 21)

Of the 2,460 farms in Delaware in 1997, the vast majority (81%) were individually owned or family-owned. Corporate ownership and partnership are the second and third most frequent types of farm ownership but account for a small percentage of the total number of farms (10% and 8%, respectively). Ownership in the counties follows the same patterns as the state. Since 1982, the number of the individually owned or family-owned farms and partnerships has decreased, while the number of farms owned by family-held corporations has increased.

Table 10: Organization of Farms in Delaware - 1982, 1997 and Changes, 1982 - 1997

	Delaware	Kent	New Castle	Sussex
<u>1997</u>				
Individual or Family	1,995	638	251	1,106
Partnership	207	71	24	112
Corporation				
Family held	222	51	41	130
Other than family held	14	3	4	7
Other cooperative estate or trust, institutional, etc.	22	4	7	11
<u>1982</u>				
Individual or Family	2,830	864	402	1,564
Partnership	302	96	48	158
Corporation				
Family held	174	43	29	102
Other than family held	16	2	6	8
Other cooperative estate or trust, institutional, etc.	16	4	3	9
<u>1982 - 1997</u>				
	Absolute Change			
Individual or Family	-835	-226	-151	-458
Partnership	-95	-25	-24	-46
Corporation				
Family held	48	8	12	28
Other than family held	-2	1	-2	-1
Other cooperative estate or trust, institutional, etc.	6	0	4	2
<u>1982 - 1997</u>				
	Percent Change			
Individual or Family	-29.51%	-26.16%	-37.56%	-29.28%
Partnership	-31.46%	-26.04%	-50.00%	-29.11%
Corporation				
Family held	27.59%	18.60%	41.38%	27.45%
Other than family held	-12.50%	50.00%	-33.33%	-12.50%
Other cooperative estate or trust, institutional, etc.	37.50%	0.00%	133.33%	22.22%



Characteristics of Farm Production

This section describes various characteristics of farm production in the state. These characteristics include the value of machinery and equipment, production expenses, and the use of hired labor and irrigation.

Machinery and Equipment (Table 11 - Charts 22 and 23)

In 1997, the total value of Delaware farmers' machinery and equipment was more than \$187 million. The average value was \$76,000 per farm. The majority (55%) of the value of this equipment was in Sussex County. New Castle County had the largest average value of machines and equipment in the state of \$83,900, while Kent County had the lowest average value with \$74,379.

In terms of value groups, 1,229 (50%) of the farms in the state had machinery and equipment with a value between \$10,000 and \$49,999. This value group accounted for the

largest number of farms in each of the counties. This is reflective of the large number of small farming operations in the state. It is important to note that the value groups are based on a survey and the totals may not exactly match the total number of farms in the state.

The total value of Delaware farmers' machinery increased from \$154 million in 1982 to \$187 million in 1997, a 22% increase. However, since 1982, the average value per farm increased from \$46,012 to \$76,183, a 65.6% increase.

Table 11: Value of Machinery and Equipment on Farms in Delaware, 1982 and 1997

1997	Delaware		Kent		New Castle		Sussex	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Estimated market value of all machinery and equipment (\$1000)	187,259	100.00%	56,974	30.43%	27,351	14.61%	102,934	54.97%
Average per Farm (dollars)	76,183		74,379		83,899		75,354	
Farms by value group								
\$1 to \$9,999	374	15.22%	120	15.67%	44	13.50%	210	15.37%
\$10,000 to \$49,999	1,229	50.00%	349	45.56%	187	57.36%	693	50.73%
\$50,000 to \$99,999	365	14.85%	158	20.63%	10	3.07%	197	14.42%
\$100,000 to \$199,000	274	11.15%	76	9.92%	55	16.87%	143	10.47%
\$200,000 or more	216	8.79%	63	8.22%	30	9.20%	123	9.00%
Total	2,458	100.00%	766	100.00%	326	100.00%	1,366	100.00%

1997 data are based on a survey of a sample of farms.

1982	Delaware		Kent		New Castle		Sussex	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Estimated market value of all machinery and equipment (\$1000)	153,587	100.00%	51,856	33.76%	22,601	14.72%	79,130	51.52%
Average per Farm (dollars)	46,012		51,393		46,314		42,982	
Farms by value group								
\$1 to \$9,999	960	28.76%	315	31.22%	163	33.40%	482	26.18%
\$10,000 to \$49,999	1,562	46.79%	444	44.00%	198	40.57%	920	49.97%
\$50,000 to \$99,999	437	13.09%	117	11.60%	64	13.11%	256	13.91%
\$100,000 to \$199,000	226	6.77%	78	7.73%	39	7.99%	109	5.92%
\$200,000 or more	153	4.58%	55	5.45%	24	4.92%	74	4.02%
Total	3,338	100.00%	1,009	100.00%	488	100.00%	1,841	100.00%

Chart 22: Estimated Value of All Machinery and Equipment on Farms in Delaware
Distribution by County, 1997

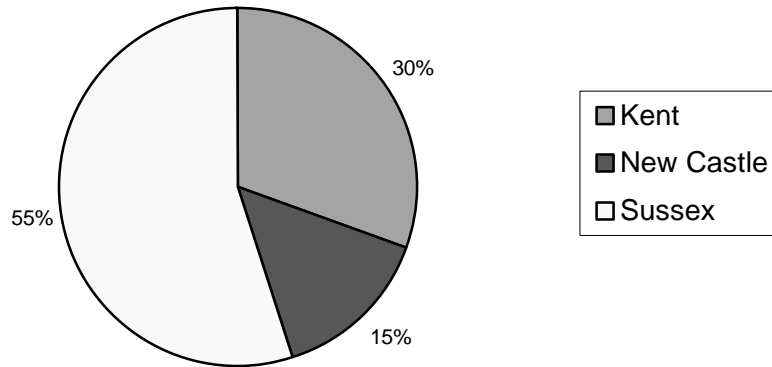
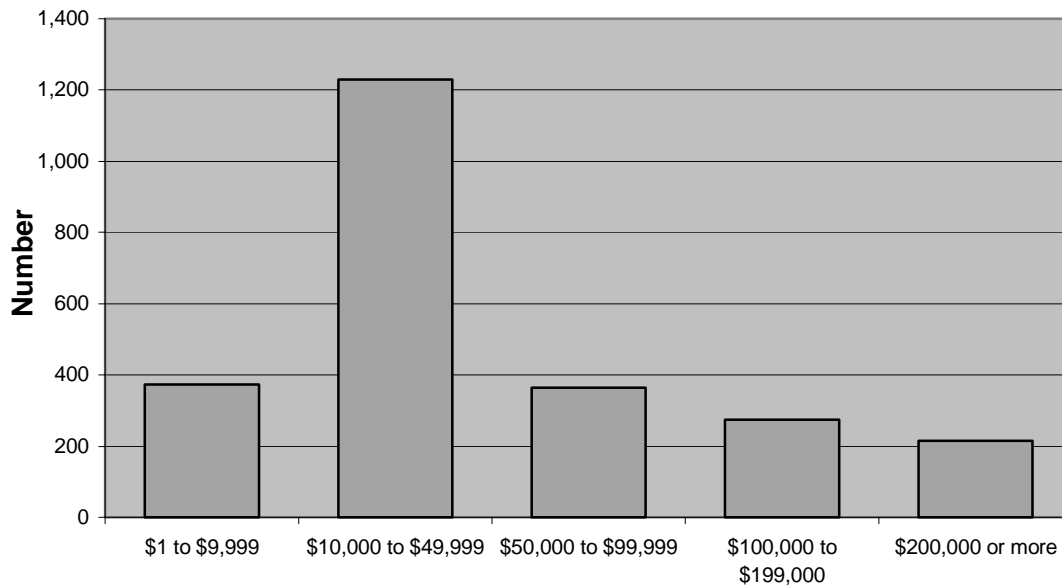


Chart 23: Farms by Value of Machinery and Equipment on Farms in Delaware
Distribution of Farms by Value Group, 1997



Production Expenses (Table 12 - Chart 24)

Production expenses for Delaware farms reflect the mix of agricultural commodities produced on the farms. In 1997, total production expenses for farms were \$620 million. By far, the major expense category was feed for livestock and poultry, which accounted for 58.5% (\$363 million) of total production expenses. The next largest expense categories for the state were livestock and poultry purchased (\$64 million) and hired farm labor (\$30 million).

Sussex County, with the largest number of poultry growers in the state, reported that feed accounted for 65.6% and livestock and poultry accounted for 11.5% of their total expenses in 1997. These categories dominated production expenses. In Kent County, the major expense categories, in addition to feed (44%), were hired farm labor (8.5%), livestock and poultry (7.6%), and commercial fertilizer (5.7%). In New Castle County, the major expense categories were feed (15.3%), hired farm labor (12.7%), and commercial fertilizer (11%).

Table 12: Selected Production Expenses on Farms in Delaware, 1982 and 1997

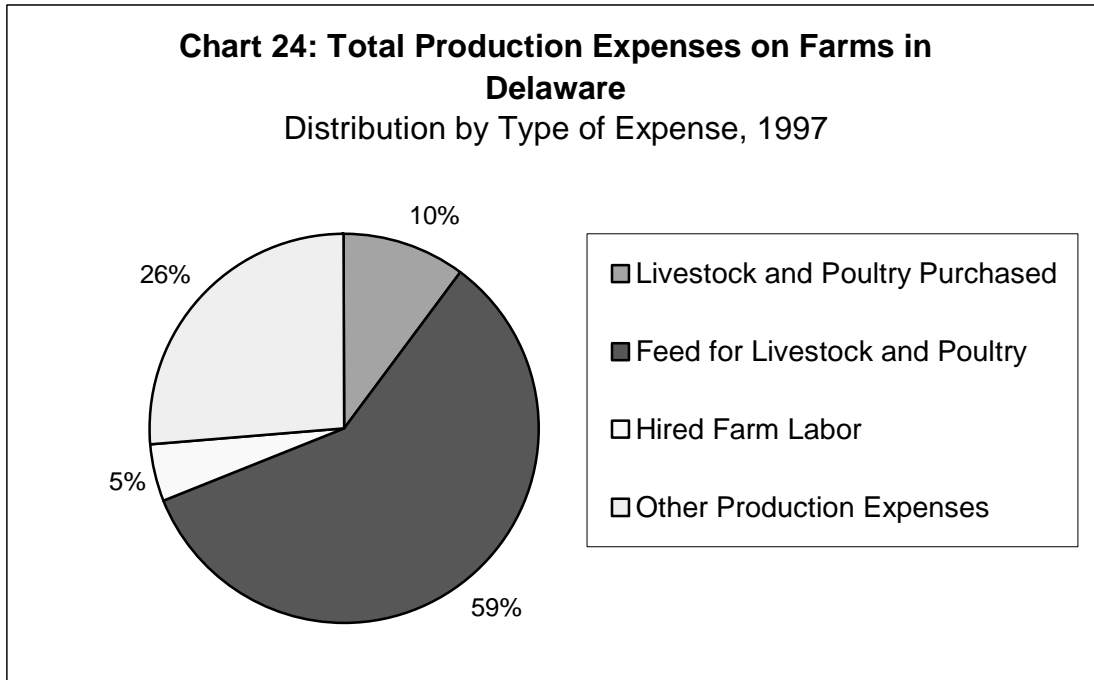
	Delaware (\$1,000)	Kent (\$1,000)	New Castle (\$1,000)	Sussex (\$1,000)
1997				
Total Production Expenses	620,297	133,779	29,852	456,666
Sum of Selected Production Expenses*	550,893	111,935	21,757	417,198
Livestock and Poultry Purchased	63,980	10,221	1,146	52,613
Feed for Livestock and Poultry	363,258	59,201	4,578	299,479
Seeds, Bulbs, Plants, and Trees	11,554	3,913	1,947	5,693
Commercial Fertilizer	20,537	7,578	3,268	9,691
Other Ag. Chemicals	16,274	5,892	2,035	8,346
Hired Farm Labor	30,207	11,434	3,794	14,979
Contract Labor	4,083	1,275	721	2,087
Customwork, Machine Hire and Rental of Machinery and Equipment	3,395	1,068	408	1,919
Energy and Petroleum Products	19,739	5,721	1,897	12,120
Interest Expenses Reported	17,866	5,632	1,963	10,271
Other Production Expenses	69,404	21,844	8,095	39,468

1997	Percent of Total Expenses			
Livestock and Poultry Purchased	10.31%	7.64%	3.84%	11.52%
Feed for Livestock and Poultry	58.56%	44.25%	15.34%	65.58%
Seeds, Bulbs, Plants, and Trees	1.86%	2.92%	6.52%	1.25%
Commercial Fertilizer	3.31%	5.66%	10.95%	2.12%
Other Ag. Chemicals	2.62%	4.40%	6.82%	1.83%
Hired Farm Labor	4.87%	8.55%	12.71%	3.28%
Contract Labor	0.66%	0.95%	2.42%	0.46%
Customwork, Machine Hire and Rental of Machinery and Equipment	0.55%	0.80%	1.37%	0.42%
Energy and Petroleum Products	3.18%	4.28%	6.35%	2.65%
Interest Expenses Reported	2.88%	4.21%	6.58%	2.25%
Other Production Expenses	11.19%	16.33%	27.12%	8.64%

1982				
Total Production Expenses	NA	NA	NA	NA
Sum of Selected Production Expenses*	272,370	51,843	17,022	203,506
Livestock and Poultry Purchased	37,202	4,437	570	32,196
Feed for Livestock and Poultry	140,508	15,420	2,393	122,696
Seeds, Bulbs, Plants, and Trees	6,964	2,730	1,270	2,964
Commercial Fertilizer	19,993	7,880	3,649	8,463
Other Ag. Chemicals	10,868	3,496	1,750	5,621
Hired Farm Labor	17,893	5,646	2,026	10,220
Contract Labor	1,296	624	151	521
Customwork, Machine Hire and Rental of Machinery and Equipment	2,606	817	487	1,303
Energy and Petroleum Products	18,092	5,462	2,443	10,187
Interest Expenses Reported	16,948	5,331	2,283	9,335
Other Production Expenses				

*Sum of **Selected** Production Expenses is the total of the included categories only.

NA – data no available in 1982.



Hired Farm Labor (Table 13 - Chart 25)

The number of workers hired by Delaware farmers declined by 35% over the last fifteen years (1982 to 1997). In 1982, there were 8,172 farm workers reported in Delaware, and in 1997, 5,300 were reported. This pattern of decline occurred in all three counties as well. Sussex County led the decline with a percentage change of -45%, followed by New Castle (-33%) and Kent (-21%) counties. While the number of workers in the state declined by over one-third, payroll increased by 69%, from \$18 million to \$30 million since 1982.

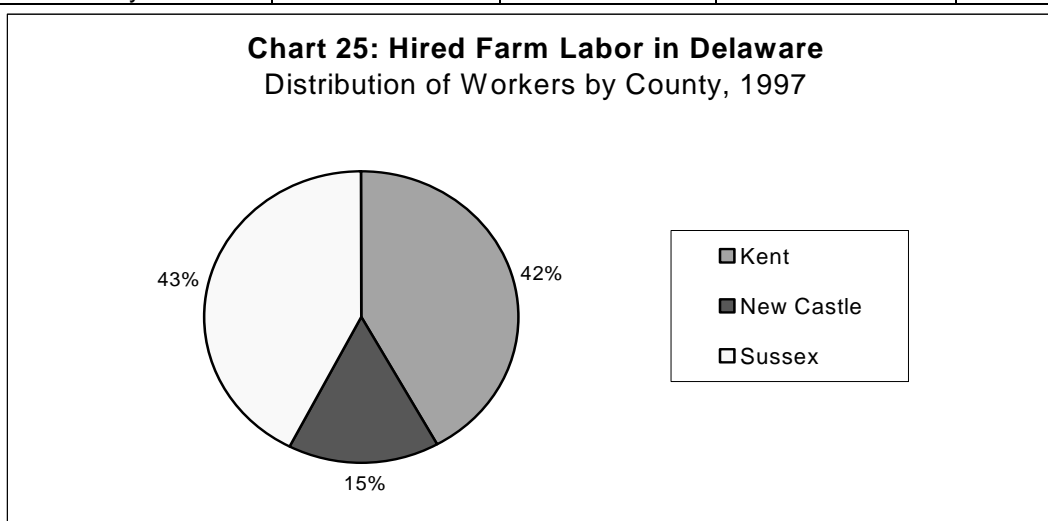
Table 13: Hired Farm Labor in Delaware - 1982, 1997 and Changes 1982 - 1997

	Delaware	Kent	New Castle	Sussex
<u>1997</u>				
Hired Farm Labor (workers)	5,299	2,225	818	2,256
Payroll (\$1,000)	30,207	11,434	3,794	14,979
Workers by days worked				
150 days or more	1,445	397	213	835
Less than 150 days	3,854	1,828	605	1,421

<u>1982</u>				
Hired Farm Labor (workers)	8,172	2,809	1,230	4,133
Payroll (\$1,000)	17,893	5,646	2,026	10,220
Workers by days worked				
150 days or more	2,069	655	325	1,089
Less than 150 days	6,103	2,154	905	3,044

	Absolute Change			
<u>1982 - 1997</u>				
Hired Farm Labor (workers)	-2,873	-584	-412	-1,877
Payroll (\$1,000)	12,314	5,788	1,768	4,759
Workers by days worked				
150 days or more	-624	-258	-112	-254
Less than 150 days	-2,249	-326	-300	-1,623

	Percent Change			
<u>1982 - 1997</u>				
Hired Farm Labor (workers)	-35.16%	-20.79%	-33.50%	-45.41%
Payroll (\$1,000)	68.82%	102.52%	87.27%	46.57%
Workers by days worked				
150 days or more	-30.16%	-39.39%	-34.46%	-23.32%
Less than 150 days	-36.85%	-15.13%	-33.15%	-53.32%



Irrigated Farmland (Table 14 - Chart 26 and 27)

In 1997, 415 farms irrigated 73,000 acres of land in Delaware. Most of the farms using irrigation (261 farms) and most of the acres of irrigated land (49,000 acres) were in Sussex County. The number of farms with irrigated land increased both in number and as a percent of total farms since 1982. Total acreage of irrigated land in Delaware increased by 64%, from 44,000 acres in 1982 to 73,000 acres in 1997. The greatest increases occurred in Sussex County where the number of farms irrigating increased by 43% and acres irrigated increased by 85%.

Table 14: Farms in Delaware with Irrigation - 1982, 1997 and Changes, 1982 - 1997

	Delaware	Kent	New Castle	Sussex
<u>1997</u>				
Farms	415	102	52	261
Irrigated Land (acres)	72,635	21,072	2,857	48,706
<u>1982</u>				
Farms	323	93	47	183
Irrigated Land (acres)	44,168	15,549	2,323	26,296
<u>1982 - 1997</u>				
	Absolute Change			
Farms	92	9	5	78
Irrigated Land (acres)	28,467	5,523	534	22,410
<u>1982 - 1997</u>				
	Percent Change			
Farms	28%	10%	11%	43%
Irrigated Land (acres)	64%	36%	23%	85%

Chart 26: Farms in Delaware with Irrigation
Distribution by County, 1997

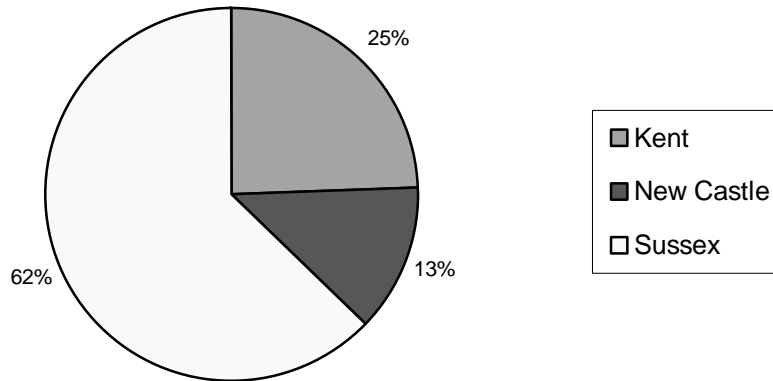
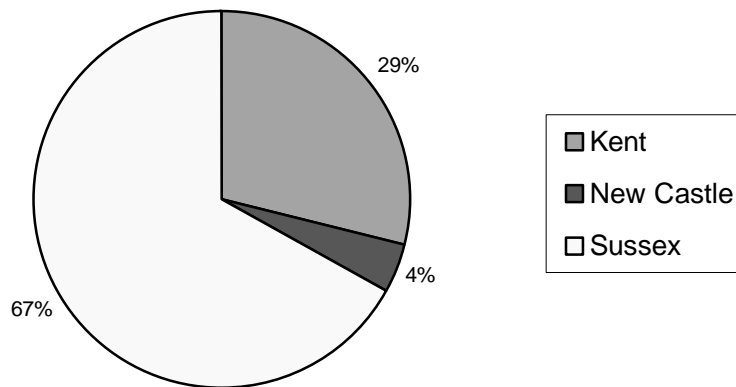


Chart 27: Irrigated Land in Delaware
Distribution of Acres by County, 1997



SUMMARY

Agriculture today consists of a vast array of economic activities to produce and provide food, fiber and related products and services. These economic activities can be divided into three sectors: the farm sector, agribusiness and the public sector. Using data from the 1982 and 1997 Censuses of Agriculture, this bulletin documents changes in the farm sector of Delaware agriculture over the 1982 - 1997 time period.

Over the last century, the decline in number of farms and the increase in farm size in Delaware have mirrored national trends. Also, land in farms in the state has declined, while the average value of land and buildings increased. Poultry and cash grains continue as major products in the Delaware farm economy, with 35 percent of farms reporting cash grains as their primary product and 34 percent reporting poultry and eggs. Poultry, the state's most important product, accounted for more than two-thirds of all agricultural sales in 1997.

Agricultural sales in aggregate and average per farm in the state have increased in the last 15 years. The structure of farming in Delaware is typical of the sector nationally. A few large farms account for a majority of the agricultural sales in the state, while small farms account for nearly half of the total number of farms.

Characteristics of farm operators in the state continue to change. In 1997, almost two-thirds of operators were full owners of their farms while one-third were part owners. Nearly three-fourths of the farmers in the state reside on the farm. Most farmers reported farming as their principal occupation while almost one half of all farmers in the state worked off the farm during the year. The average age of operators increased from 51 years to 54.

Farm operations in the state have changed as well. In 1997, a vast majority of the farms in

Delaware were individually owned. Only 17 percent of farms were reported as being partnerships or corporations. The average value of machinery and equipment in the state was \$76,000 in 1997. One half of the farms had machinery and equipment valued between \$10,000 and \$49,000. Production expenses in Delaware, which reflect the mix of agricultural commodities produced on farms, totaled \$620 million in 1997. Feed for livestock and poultry accounted for 58 percent of production expenses for the state.

While the number of farm workers decreased, payroll increased from 1982 to 1997. Lastly, irrigated farmland in the state increased over the 1982 – 1997 time period. In 1997, a total of 415 farms irrigated 73 thousand acres of land in Delaware.

Overall, the analysis indicates that the farm sector of Delaware agriculture continues to change. Reasons for the change remain the same as they have been for several decades: continued population growth, emerging technologies, evolving and waning demand for agricultural products, fluctuating domestic and international markets, changing consumer preferences, economic conditions both locally and nationally, increasing environmental concerns and growing competition for critical resources, such as land and water. These factors have affected the farm sector of Delaware throughout the last century and will continue to influence in into the 21st century.

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College of Agriculture and Natural Resources
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Environmental and Resource Economics	Price and Demand Analysis
Food and Agribusiness Management	Rural and Community Development
Food and Fiber Marketing	Statistical Analysis and Research Methods
International Agricultural Trade	

The department's research in these areas is part of the organized research program of the Delaware Agricultural Experiment Station, College of Agriculture and Natural Resources. Much of the research is in cooperation with industry partners, other state research stations, the USDA, and other State and Federal agencies. The combination of teaching, research, and service provides an efficient, effective, and productive use of resources invested in higher education and service to the public. Emphasis in research is on solving practical problems important to various segments of the economy.

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