

U.S. Farms: Numbers, Size, and Ownership

In the 1930s, two important longrun trends began that affected the number of U.S. farms. First, nonagricultural employment resumed growing after the 1933 low point of the Great Depression (fig. 2). Second, farm productivity began to increase steadily (fig. 3), starting about 1937 (Cochrane, 1993, pp. 360-363). Productivity growth led to excess capacity in agriculture, farm consolidation, and farm operators and laborers leaving farming to work in the growing nonfarm economy. The decline in farm numbers slowed in the 1980s and nearly stopped in the 1990s. By 2005, about 2.1 million farms remained, and less than 2 percent of U.S. workers were employed in agriculture. The remaining farms, however, vary in size and their share of total production.

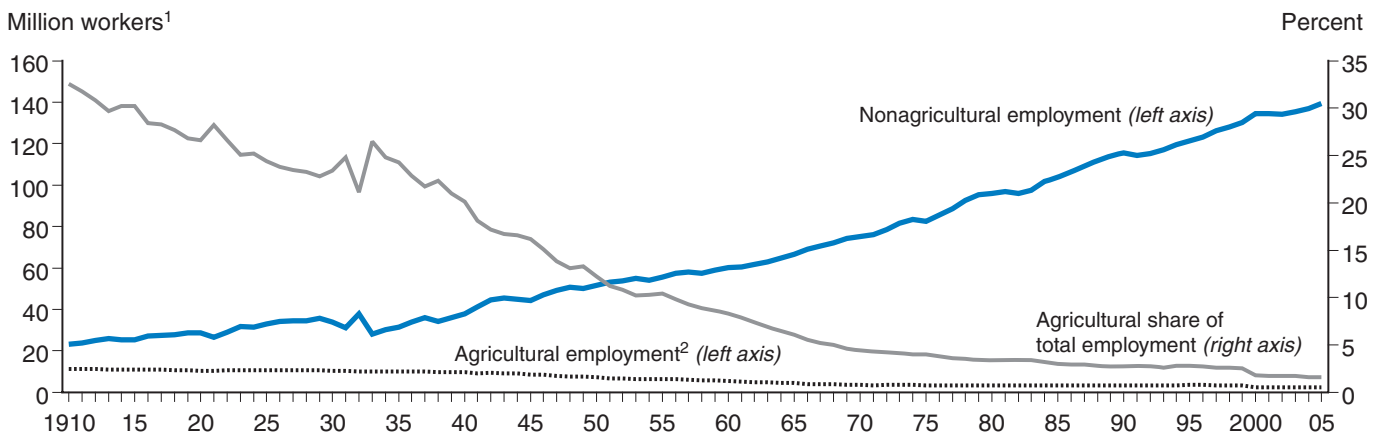
Share of Farms, Production, and Assets

Ninety-eight percent of U.S. farms are family farms. The remaining 2 percent are nonfamily farms, which produce 15 percent of the value of agricultural output (fig. 4).² Two features of family farms stand out. First, there are many small family farms (< \$250,000 annual sales), making up 90 percent of all U.S. farms. Second, large-scale family farms account for 60 percent of all production.

Nevertheless, small farms make significant contributions to the value of production for specific commodities (fig. 5), including wheat, corn, soybeans, hay, tobacco, beef, and “other livestock.” At the other extreme, small farms contribute a minuscule share to the value of production for hogs and poultry. The largest share of small farm production occurs among medium-sales farms (\$100,000-\$249,999), which account for 11 percent of total U.S. production.

²Nonfamily farms’ share of production increased by 1.5 percentage points between 2003 and 2004 (from 13.7 percent to 15.2 percent). This change, however, was not statistically significant.

Figure 2
Agricultural and nonagricultural employment, 1910 to 2005
Agriculture’s share of total U.S. employment has fallen to less than 2 percent



¹Persons at least 14 years old prior to 1947; persons at least 16 years old in 1947 and later years.

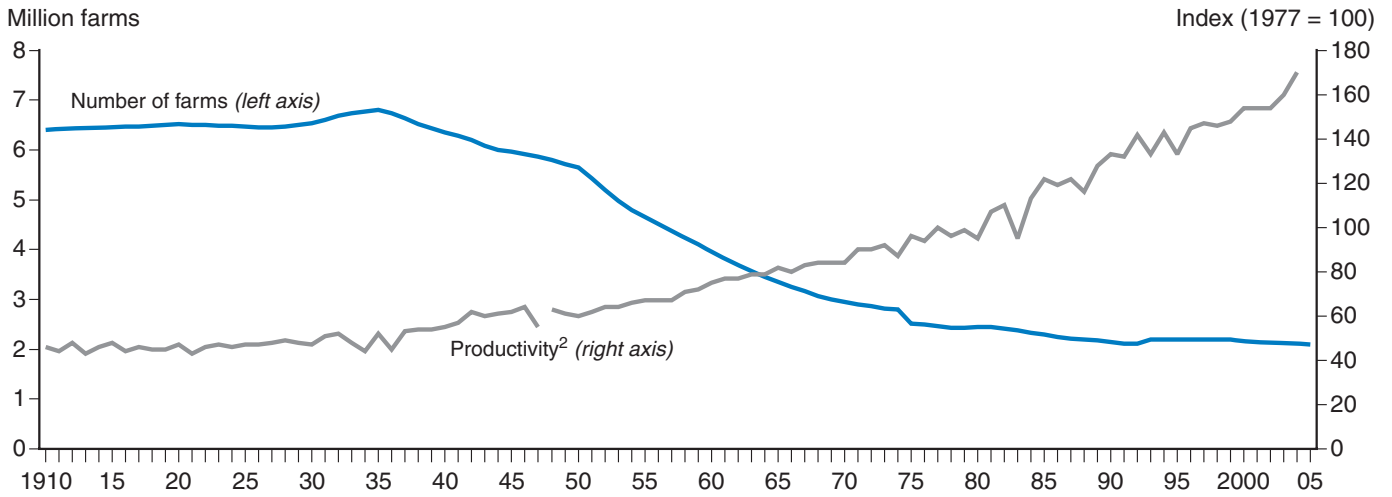
²From 2000 onward, estimates of agricultural employment actually are for “agricultural and related industries.” For more information, see the U.S. Department of Labor, Bureau of Labor Statistics (2003, p. 20).

Source: USDA, Economic Research Service, compiled from Bureau of Labor Statistics data (U.S. Office of the President, 2006, pp. 324-325; U.S. Department of Commerce, 1975, p. 126).

Figure 3

Farm productivity¹ and number of farms, 1910 to 2005

The number of farms declined as productivity increased



¹Farm output per unit of total factor input (total factor productivity), available through 2004.

²The break in the productivity line reflects the introduction of new methodology beginning with the 1948 estimate. The new methods had minor impacts on the estimates. For more information, see Ahearn et al. (1998, pp. 15-21).

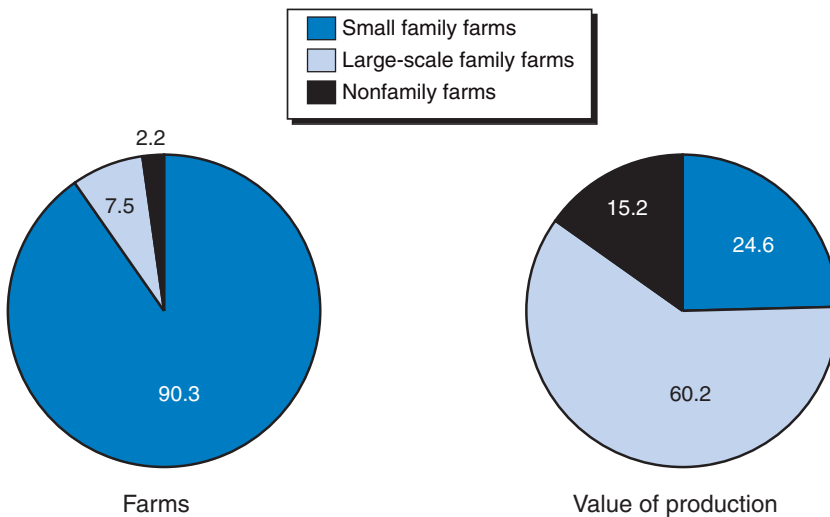
Source: USDA, Economic Research Service, compiled from National Agricultural Statistics Service annual estimates of the number of farms from the June Agricultural Survey and from ERS estimates of farm productivity. ERS productivity indices prior to 1948 came from Johnson (1990).

Figure 4

Share of total farms and value of production, 2004

Large-scale family farms account for 60 percent of production

Percent of U.S. farms or production



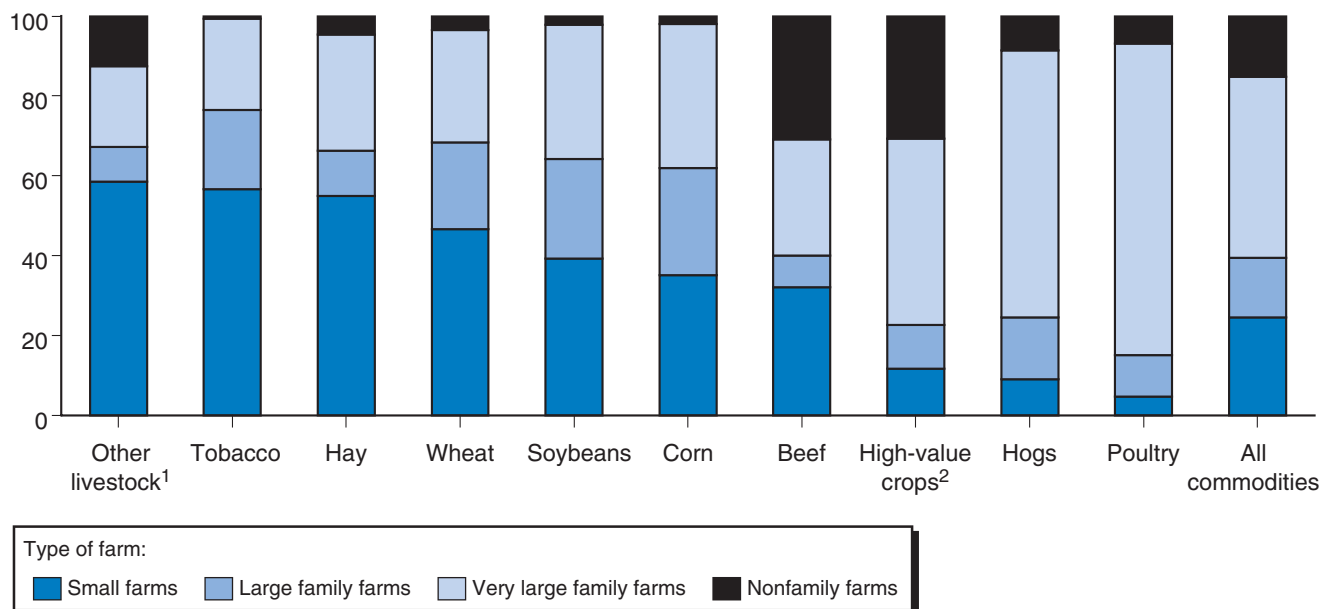
Source: USDA, Economic Research Service, 2004 Agricultural Resource Management Survey, Phase III.

Figure 5

Distribution of the value of production for selected commodities, 2004

Small farms produce a substantial share of several commodities

Percent of value of production



¹Sheep, lambs, wool, goats, goats' milk, mohair, horses, ponies, mules, donkeys, bees, honey, aquaculture, mink, rabbits, other fur bearing animals, bison, deer, elk, llamas, etc.

²Vegetables, fruits and tree nuts, and nursery and greenhouse products.

Source: USDA, Economic Research Service, 2004 Agricultural Resource Management Survey, Phase III.

The share of assets and land held by small farms is substantially more than indicated by their 25-percent share of production. Small farms hold about 68 percent of all farm assets, including 61 percent of the land owned by farms (fig. 6). Because of their large land holdings—in aggregate—small farms are important in conservation efforts. Small farms account for 82 percent of the land farmers enrolled in the Conservation Reserve Program (CRP) and Wetlands Reserve Program (WRP).

Farm Size and Tenure

Variation in size—measured in sales, acres, and labor use—helps explain the distribution of agricultural production. The 1.4 million limited-resource, retirement, and residential/lifestyle farms account for only 8 percent of production because most of these farms are very small (table 1). Roughly three-fourths of the farms in each of the three groups have annual gross sales of less than \$10,000. The average acreage operated for farms in these three groups is also small, ranging from 163 to 212 acres.

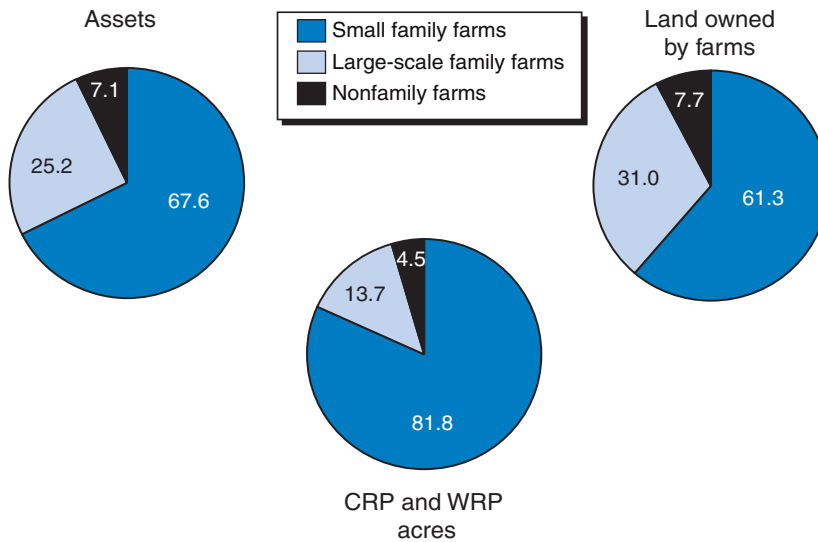
Median acres operated. Average (or mean) acreage operated may not best indicate the size of a typical farm in a group because a few high-acreage farms may raise the average well above the acreage operated on most farms. Median acreage operated—the midpoint of the distribution of farms by acres operated—is a better indicator. Median acreage operated ranges from 60 to 80 acres for limited-resource, retirement, and residential/lifestyle

Figure 6

Share of farm business assets, acres owned, and acres enrolled in the Conservation Reserve Program and Wetlands Reserve Program, 2004

Small farms account for most farm assets

Percent of U.S. farm assets, acres owned, or program acres



Source: USDA, Economic Research Service, 2004 Agricultural Resource Management Survey, Phase III.

farms, which means the typical farm in each of these groups is even smaller than suggested by the group's average acreage.

Although only half of low-sales farms (< \$100,000) have gross sales of less than \$10,000, three-fourths have gross sales of less than \$50,000. Median acres operated was 145 acres per low-sales farm, roughly double the medians for limited-resource, retirement, or residential/lifestyle farms. Median acreage is much larger for medium-sales small farms and large-scale farms, ranging from 530 to 1,055 acres.

The high average acreage for nonfamily farms, more than 1,200 acres, reflects a small share of farms in the group with very large acreages. In contrast, the median is just 173 acres, which is more consistent with the 40-percent share of nonfamily farms with gross sales less than \$10,000. Most of these very small nonfamily farms (77 percent) are classified in the "other" category of business organization, which includes farms in estates or trusts and farms organized as cooperatives. Very small nonfamily farms in the other organization category are more likely to be in estates and trusts than to be cooperatives. (Business organization is discussed in more detail later in this report.)

Million-dollar farms. Forty-two percent of very large family farms (\$500,000 or more annual sales) and 9 percent of nonfamily farms have gross sales of at least \$1 million. These "million-dollar" farms make up less than 2 percent of all U.S. farms, but they account for 45 percent of the value of production. The number of million-dollar farms increased by 22 percent

Table 1

Farm size, tenure, and labor, by farm type, 2004

Item	Small family farms					Large-scale family farms		Nonfamily farms	All farms
	Limited-resource	Retirement	Residential/lifestyle	Farming-occupation		Large	Very large		
				Low-sales	Medium-sales				
	<i>Number</i>								
Total farms	197,734	338,671	837,542	395,781	133,299	86,087	71,708	47,103	2,107,925
	<i>Percent of U.S. total</i>								
Distribution of:									
Farms	9.4	16.1	39.7	18.8	6.3	4.1	3.4	2.2	100.0
Value of production	1.0	2.0	5.3	5.5	10.8	14.8	45.4	15.2	100.0
	<i>Percent of group</i>								
Sales class:									
Less than \$10,000	76.2	72.6	71.6	47.1	na	na	na	39.5	57.0
\$10,000 to \$49,999	19.2	18.6	20.9	29.4	na	na	na	18.1	19.0
\$50,000 to \$99,999	4.0	6.3	5.2	23.5	na	na	na	*9.6	8.1
\$100,000 to \$174,999	d	*1.9	1.8	na	59.4	na	na	*6.8	5.0
\$175,000 to \$249,999	na	*0.6	0.6	na	40.6	na	na	*4.1	3.0
\$250,000 to \$499,999	na	na	na	na	na	100.0	na	5.9	4.2
\$500,000 to \$999,999	na	na	na	na	na	na	57.8	7.0	2.1
\$1,000,000 or more	na	na	na	na	na	na	42.2	8.9	1.6
	<i>Acres per farm</i>								
Acres operated:									
Mean (average)	167	212	163	413	*1,170	1,700	*3,138	1,232	470
Median ¹	60	80	67	145	530	834	1,055	173	100
	<i>Annual person equivalents of labor per farm</i>								
Average person equivalents of labor ^{2, 3}	0.997	0.928	0.782	1.500	2.580	3.265	8.156	5.385	1.529
	<i>Percent of total hours</i>								
Share of hours worked by: ⁴									
Principal operator ³	71.7	67.0	63.5	65.4	59.7	47.5	19.2	19.1	51.4
Spouse ³	12.2	17.2	18.6	16.1	12.2	10.9	4.5	*2.1	12.4
Hired labor	2.5	2.2	2.5	5.1	#10.8	21.8	55.5	61.6	19.8
	<i>Percent of group</i>								
Tenure:									
Full owner	68.3	79.5	67.2	60.3	20.5	19.1	26.1	72.1	61.8
Part owner	25.7	*19.1	27.6	32.8	68.1	66.5	60.3	18.4	32.1
Tenant ⁵	*6.0	*1.3	5.2	6.9	#11.4	14.3	13.6	9.5	6.1

d = Data suppressed due to insufficient observations.

na = Not applicable.

* = Standard error is between 25 percent and 50 percent of the estimate.

= Standard error is greater than 75 percent of the estimate.

¹Midpoint of the distribution of farms by acres operated. Half the farms in a group operate more acres than the median, while the other half operate fewer acres than the median.²One annual person equivalent equals 2,000 hours of labor, or 50 weeks per year times 40 hours per week.³Includes paid and unpaid hours.⁴Shares worked by other operators, unpaid workers, and contract labor are not shown separately.⁵Farms that rent all the land they operate. Also includes farms owning less than 1 percent of the land they operate.

Source: USDA, Economic Research Service, 2004 Agricultural Resource Management Survey, Phase III.

between 2003 and 2004, from 28,300 to 34,500, as 2004 was a very good year for the farm sector.

Labor hours.³ One measure of annual labor use is the “person equivalent,” defined as 2,000 hours, or 40 hours of work per week for 50 weeks per year. Residential/lifestyle, retirement, and limited-resource farms use the least labor of all the farm types, 1 person equivalent or less. Labor use jumps to 1.5 person equivalents for low-sales farms and increases with sales to 8.2 person equivalents for very large farms. Nonfamily farms use 5.4 person equivalents, on average. This estimate, however, reflects heavy labor use by relatively few farms. Only 20 percent of nonfamily farms use more than 5 person equivalents of labor, while 46 percent use less than 1.

The labor used on farms can come from a variety of sources: operators and their spouses, secondary operators, unpaid workers, hired labor, and contract labor. Nevertheless, operators are a significant source of labor for most farm types. The operator provides 60 to 70 percent of the labor for each type of small farm, and nearly 50 percent for large family farms (\$250,000-\$499,999 annual sales). Operators supply only 19 percent of labor on very large family farms and nonfamily farms.

Tenure. Renting land is a way to expand by controlling additional land without the debt and commitment of capital associated with ownership (Reimund and Gale, 1992, pp. 7-8). About two-thirds of medium-sales and large-scale farms are part owners, meaning that they own part of the land they operate and rent the rest. In addition, 14 percent of large-scale farms—versus 6 percent of all farms—are tenants that own none of the land they farm. About three-quarters of large-scale tenants specialize in crops, compared with two-fifths of farms in general.

Specialization

Specialization varies by farm size. Small farms tend to specialize in raising beef cattle, other grazing livestock, or a variety of field crops (table 2). Poultry, hogs, and high-value crops tend to be produced on large-scale farms. Medium-sales farms and large family farms are most likely to specialize in grain.

Beef cattle. Beef cattle are a common specialization among small farms, accounting for 34 to 41 percent of limited-resource, retirement, residential/lifestyle, and low-sales farms. Beef cattle—commonly cow-calf enterprises in the case of small farms—offer three advantages to operators of small farms. First, cattle are less labor-intensive than many other enterprises, which may be attractive to an operator who is retired or holds a full-time job off the farm (Cash, 2002, p. 21). Second, cattle enterprises tend to be low-cost, which limits cash requirements. Third, under the existing tax code, losses from farming can be written off against income from other sources (Freshwater and Reimer, 1995, p. 220). Producing calves allows farmers to group their expenses and sales in different years to generate small profits in some years and large losses in others (Hoppe and Banker, 2006, p. 14).

Other specializations. Two other specializations were common among limited-resource, retirement, residential/lifestyle, and low-sales farms. About

³ARMS collects the number of hours worked on farm by the principal operator, the spouse of the principal operator, other operators, and unpaid workers. The survey does not collect hours worked by hired or contract labor, however. Hours of hired and contract labor are estimated by dividing hired labor and contract labor expense by the State-specific wage rate for farm labor.

Table 2

Farm specialization and diversification, by farm type, 2004

Item	Small family farms					Large-scale family farms		Nonfamily farms	All farms
	Limited-resource	Retirement	Residential/lifestyle	Farming-occupation		Large	Very large		
				Low-sales	Medium-sales				
	<i>Number</i>								
Total farms	197,734	338,671	837,542	395,781	133,299	86,087	71,708	47,103	2,107,925
	<i>Percent</i>								
Commodity specialization: ¹									
Cash grain ²	11.4	8.2	11.3	14.3	38.7	42.0	24.5	*9.9	14.8
Other field crops ³	23.2	27.8	23.8	19.6	10.9	11.2	9.9	33.9	22.0
High-value crops ⁴	*9.5	5.7	**3.3	9.1	5.9	9.6	12.6	23.4	6.5
Beef	34.3	40.5	37.9	34.0	20.0	11.9	12.1	23.9	33.9
Hogs	d	d	*1.1	*0.6	*3.5	4.2	9.2	1.1	1.6
Dairy	d	d	d	3.0	16.2	13.0	11.3	2.1	2.9
Poultry	d	d	**0.9	d	*2.2	6.5	18.1	#1.2	**1.6
Other livestock ⁵	18.5	15.9	*21.3	19.1	#2.6	1.7	*2.2	*4.4	16.7
	<i>Number</i>								
Average number of commodities ⁶	1.6	1.4	*1.4	1.9	3.5	3.4	3.2	1.4	1.8
	<i>Percent</i>								
Number of commodities: ⁶									
None ⁷	14.8	18.6	17.7	13.0	0.0	0.0	d	*23.2	14.4
One	42.4	38.0	40.5	33.5	14.2	13.7	20.4	41.1	35.6
Two	25.4	33.8	28.9	31.4	24.4	22.7	19.1	*22.4	28.8
Three	*9.9	*6.9	#7.8	10.0	17.2	22.4	23.1	*5.9	9.9
Four or more	7.4	#2.7	#5.1	12.1	44.2	41.2	37.4	7.4	*11.4

d = Data suppressed due to insufficient observations.

* = Standard error is between 25 percent and 50 percent of the estimate.

** = Standard error is between 51 percent and 75 percent of the estimate.

= Standard error is greater than 75 percent of the estimate.

¹Commodity that accounts for at least half of the farm's value of production.

²Includes wheat, corn, soybeans, grain sorghum, rice, and general cash grains, where no single cash grain accounts for the majority of production.

³Tobacco, peanuts, cotton, sugar beets, sugar cane, corn for silage, sorghum for silage, hay, canola, and general crops, where no single crop accounts for the majority of production. Also includes farms with all cropland in the Conservation Reserve or Wetlands Reserve Programs (CRP or WRP).

⁴Vegetables, fruits and tree nuts, and nursery and greenhouse products.

⁵Includes sheep, lambs, wool, goats, goats' milk, mohair, horses, ponies, mules, donkeys, bees, honey, aquaculture, mink, rabbits, other fur-bearing animals, bison, deer, elk, llamas, etc. Also includes farms where no single livestock species accounts for the majority of production.

⁶Based on 26 commodities or commodity groups: barley, oats, wheat, corn for grain, corn silage, soybeans, sorghum for grain, sorghum silage, canola, fruits, vegetables, nursery products, peanuts, sugar cane, sugar beets, rice, potatoes, cotton, tobacco, hay, other crops, cattle, hogs, dairy, poultry, and other livestock.

⁷Includes farms with no production due to drought, other adverse weather, crop and livestock disease, etc. Also includes farms with all cropland in CRP and WRP.

Source: USDA, Economic Research Service, 2004 Agricultural Resource Management Survey, Phase III.

one-quarter of the four groups specialized in “other field crops,” which also includes farms with all their crop acres in the CRP and WRP. Another fifth of each group specialize in “other livestock,” which includes grazing livestock other than cattle (namely horses, sheep, and goats.)

Some specializations are more common among family farms with gross sales greater than \$100,000 (medium-sales and large-scale farms). Farms specializing in cash grains account for about 40 percent of medium-sales and large family farms, while 11-16 percent of medium-sales and large-scale farms specialize in dairy (versus 3 percent of farms in general). Very large family farms are at least twice as likely as any other type to specialize in poultry or hogs, accounting for three-fourths of poultry production and two-thirds of hog production (fig. 5).

High-value crops. Production of high-value crops is heavily concentrated among very large family farms and nonfamily farms, which together account for 78 percent of the total. No more than 10 percent of any small farm type specializes in these crops (table 2). High-value crops can generate large sales per acre, but they can require much more labor than cattle and they may require more marketing expertise.

Diversification

Family farms become more diversified as their size increases. Many small family farms specialize in a single commodity or produce nothing at all. Farms with no production include those with all their cropland in the CRP or WRP, as well as farms experiencing crop failure or loss of livestock from disease or other causes. Medium-sales and large-scale farms are more likely to produce multiple commodities: three-fifths of farms in these groups produce three or more commodities.