

## Economic Structure

The support price has underpinned the entire price structure for milk sold by farmers, either directly to processors or through cooperatives, since World War II. Technological developments, in conjunction with this Federal dairy policy that reduced milk price variability, have changed farming techniques over the last 50 years. Dairy farming has changed from depending heavily on human and animal labor to one where most operations are mechanized. Farms with 100 cows were considered large in 1950. Economies of scale and a guarantee of a minimum price for milk have led to fewer, more efficient (in terms of quantities and quality of input use), larger operations.

The dairy price support program was changed in 2000, effectively eliminating the support price as a major factor in economic decisions. Federal milk market order prices will remain, but the system will be streamlined by merging orders. While conclusions on the effects of policy changes would be speculative at this point, this section provides a broad overview of production, efficiency, and productivity characteristics that have a positive effect on the overall performance of the dairy farm business.

### Production Characteristics

Specialized dairy farms were 94 percent of the dairy farms surveyed in 1993 (app. table 1). The majority of specialized dairy farms in the Northeast, Upper Midwest, and Corn Belt milk production regions had fewer than 60 cows (app. table 2). The largest dairy operations (300 or more milk cows) were located in the Pacific and Southeast regions (see glossary). These two regions had the greatest number of large producers, an indication of the recent growth in milk production that characterized the Pacific and parts of the South. Economies of size (the costs in large-scale operations versus smaller-scale ones) have played an important role in making these areas fast-growing milk production centers (Manchester and Blayney, 1997). Larger farms also appeared in traditional dairy areas such as New York, Michigan, and Wisconsin.

In 1993, average milk production per farm in the Pacific, Southeast, and Southern Plains regions was at least three times as great as in the other three regions. However, in terms of total acres operated, specialized dairy farms in the Pacific region were much smaller than in the other five regions, primarily because these operations purchased most, if not all, of the inputs used. Management skills were focused on milk production.

On average, specialized dairy businesses used close to 5,000 hours of labor in 1993. Total labor used was great-

est in the Southeast region, about twice as much as in the Pacific and Southern Plains and four times as much as in the Corn Belt, Northeast, and Upper Midwest regions. Farms in the Southeast hired the most paid workers to do some farmwork. Businesses in the Pacific and Southern Plains also depended more heavily on paid labor. Unpaid labor (operator and other) was prevalent in the smaller farms in the Corn Belt, Northeast, and Upper Midwest.

Most of the feed fed on farms with under 60 cows was homegrown. Smaller farms in the Corn Belt, Northeast, and Upper Midwest devoted labor and management, capital, and land to feed production. Because dairy farms tend to be highly specialized in milk production, few other crops were grown. Farms that did produce other crops did so, for the most part, to feed the dairy cow herd.

More modern milking facilities (primarily herringbone parlors) were used in about 60 percent of all businesses in the Pacific and South. Barns with pipelines were more common in the once 'traditional' dairy areas, the Northeast and Upper Midwest regions. The relatively more modern businesses of the Pacific and South also made more use of automatic takeoffs, udder washers, and computerized milking and feeding systems.

### Efficiency and Productivity of Dairy Enterprises

Dairy cows on farms in the Pacific region produced an average of about 2,400 pounds more milk per year in 1993 than dairy cows on farms in the other five regions (app. table 3). Feed and labor efficiency among milk producers in the Pacific, Southeast, and Southern Plains regions were much higher than in the other regions. Producers in these three regions required nearly 50 pounds less feed and half the labor for each 100 pounds (cwt) of milk sold than did producers in the Corn Belt, Northeast, and Upper Midwest. Corn Belt, Northeast, and Upper Midwest dairy businesses were substantially smaller. Short and McBride (1996) have shown that feed and labor efficiency among milk producers improved significantly with increased size of the operation. Greater feed and labor efficiency by larger producers may be due to herd composition; better genetics; ration composition; more intensive feed management; newer, more modern facilities; and a better climate.

Producers in the Pacific region received lower milk prices, partly as a result of Federal and/or State pricing policies. Operations in this region had higher milk per cow, primarily due to the greater productivity of the milking herd. In addition, capital investment per cow and per cwt of milk sold was much lower in the Pacific region because of the larger herds.