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Characteristics, Costs, and Issues for Organic Dairy Farming

William D. McBride and Catherine Greene

Spurred by increased demand for organic milk, organic milk production has been one of the fastest growing segments of organic agriculture in the United States. Between 2000 and 2005, the number of certified organic milk cows on U.S. farms increased by an annual average of 25 percent, from 38,000 to more than 86,000. To meet the growing demand, the organic production sector has evolved much like the conventional sector. Along with primarily small, pasture-based organic operations located in the Northeast and Upper Midwest, larger organic operations, often located in the West, that use more conventional milk production technologies have increased in number. Economic incentives, driven largely by lower production costs, are behind much of this change. Proposed changes in USDA's National Organic Program (NOP), which develops, implements, and administers national production, handling, and labeling standards for organic agricultural products, seek to clarify and stiffen pasture requirements for organic certification and may determine how the organic production sector continues to evolve.

What Is the Issue?

Organic milk producers usually begin as conventional dairy operators who go through what can be a challenging and costly transition. To qualify for organic certification under the NOP, producers must make changes in animal husbandry, land and crop management, input sourcing, and certification paperwork, among others. In addition to these challenges, organic milk producers must now contend with the impact of a weaker U.S. economy on the demand for organic food products. By providing information about the characteristics, costs, and challenges faced by organic milk producers, this report provides a context for producers considering the organic approach, processors trying to supply an expanding organic milk market, and policymakers evaluating the economic implications of organic livestock production.

What Did the Study Find?

Economic forces may have pushed organic dairies to adapt their operations to be more like conventional dairies in terms of size, location, and the types of technologies used. The relative production costs for large and small organic dairies, organic dairies in the East and West, and organic dairies using pasture-based and conventional technologies are similar to those for conventional dairies.

Size and Costs of Organic Dairies. Farms producing organic milk most often have small dairy operations; 45 percent of organic dairies milk fewer than 50 cows, and 87 percent milk fewer than 100 cows. Large organic dairies with 200 cows or more are a small portion of the organic dairy population, but account for more than a third of organic milk production. Average operating costs are highest on the largest organic dairies, but total economic costs are nearly \$14 per hundredweight (cwt) less on the largest than on the smallest organic dairies because of lower capital and unpaid labor costs. The

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smallest operations use much more unpaid labor, accounting for most of this cost difference. Large organic dairies are much more likely to generate returns above capital and labor costs, suggesting that organic milk production will migrate toward larger operations, as has conventional production. Additional costs to comply with organic pasture requirements and for securing organic inputs in large volume may limit the cost advantages for larger organic dairies.

Region and Costs of Organic Dairies. More than 80 percent of U.S. organic dairies are located in the Northeast and Upper Midwest, but these operations are small and less productive than those in the West. Organic dairies in the Northeast (averaging 53 cows) and Upper Midwest (64 cows) have far fewer cows on average than those in the West (381 cows), which produce more milk per cow on average (2,700 pounds more than in the Upper Midwest and 4,000 pounds more than in the Northeast). Average feed costs per cow are significantly less on organic dairies in the Northeast and Upper Midwest due to greater use of homegrown feed and pasture. Despite higher feed costs per cow and greater labor and capital use, organic dairies in the West have lower total economic costs per cwt of milk produced. This cost advantage is the result of economies of size and much higher productivity per cow that may be attributed to the technologies used on these operations.

Pasture Use and Costs of Organic Dairies. Almost two-thirds of organic dairies report that 50 percent of dairy forage comes from pasture, and a third indicate that 75 percent or more comes from pasture. Using pasture for dairy feed costs less than higher energy feed sources, and average feed costs per cow decline as more pasture is used for dairy forage. Organic dairies using the least pasture for dairy forage, however, have lower feed costs per cwt of milk than other organic dairies because average production per cow is more than 30 percent higher. Organic dairies that use conventional feeding methods, such as confining cows and feeding harvested forages, may generate higher returns to capital and labor than those using pasture-based feeding because of higher production and economies of size, and because pasture-based feeding requires more labor.

Comparing Organic and Conventional Dairies

- Organic dairies are smaller than conventional dairies (82 cows compared with 156 cows).
- Organic dairies produce about 30 percent less milk per cow than conventional dairies (13,601 pounds per organic cow compared with 18,983 pounds per conventional cow).
- Organic dairies are more often located in the Northeast and Upper Midwest than are conventional dairies (86 percent compared with 65 percent).
- Organic dairies use more pasture-based feeding, where more than 50 percent of dairy forage fed is from pasture during grazing months, than conventional dairies (63 percent compared with 18 percent).
- Organic dairies paid \$6.37 per cwt more than conventional dairies in operating and capital costs, including transition costs, in 2005; the average price premium for organic milk was \$6.69 per cwt.
- Total economic costs of organic dairies in 2005 were \$7.65 per cwt higher than for conventional dairies, nearly \$1 per cwt higher than the average price premium for organic milk.
- Pasture-based organic dairies' total economic costs were about \$4 per cwt higher than conventional pasture-based dairies, much lower than the average price premium for organic milk in 2005.

Challenges of Organic Milk Production. Certification paperwork and compliance costs were reported by 40 percent of producers as the most challenging aspect of organic milk production, followed by finding new organic input sources (dairy replacement and feed), higher costs of production, and maintaining animal health. By contrast, the chief concern for large organic dairies seem to be finding organic input sources, and the chief concern for dairies in the Northeast seemed to be production costs; certification paperwork was a lesser concern for pasture-based dairies and more educated operators.

How Was the Study Conducted?

This study used information from a 2005 survey of U.S. milk producers as part of USDA's annual Agricultural Resource Management Survey (ARMS) administered by its National Agricultural Statistics Service (NASS) and Economic Research Service (ERS). The survey targeted dairy operations in 24 States that accounted for more than 90 percent of national milk production and covered all major production areas. A subsample of the survey targeted organic dairies identified by major organic milk processors and certifiers. Surveyed organic milk producers were divided by size, region, and pasture use, and differences in characteristics and production costs of the groups were evaluated. Regression analysis, with a treatment-effect model, was used to measure the difference in production costs between organic and conventional dairies. Differences in production costs, along with estimates of organic transition costs, indicated the milk price premiums that make organic competitive with conventional milk production.