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U.S. Dairy Goat Operations

Goat milk is used for human consumption and to feed goat kids and other livestock. For human consumption, goat milk is used primarily in cheese production and is also consumed as milk, cultured milk products, ice cream, and butter. In the United States, goat milk and other dairy goat products are valued by a growing number of connoisseur consumers. Because of its unique nutritional and biochemical properties, goat milk is also increasingly used by people with cow milk allergies and gastrointestinal disorders.

While the demand for goat milk in the United States has not risen as fast as the demand for goat meat, there has been a steady expansion in goat milk production; the dairy goat inventory increased by 15 percent from 290,789 head in 2002 to 334,754 head in 2007 (NASS, 2007). By January 1, 2011, the number of milk goats had increased to 360,000 head. (NASS Sheep and Goats, January 2011).

The NAHMS Goat 2009 study was the first national study of the U.S. goat industry and was conducted in 21 of the Nation's major goat-producing States¹. These States represented 75.5 percent of U.S. goat operations and 82.2 percent of U.S. goats (NASS 2007 Census of Agriculture). A stratified random sample of goat operations that kept at least one goat for meat, dairy, fiber, or other purposes was selected for the study. A total of 2,484 operations completed the study's first survey questionnaire and 634 completed a second mail-in questionnaire. The second questionnaire was limited to operations with 10 or more goats².

¹States and Regions:

Northeast: Indiana, Iowa, Michigan, Missouri, New York, Ohio, Pennsylvania, Wisconsin

Southeast: Alabama, Florida, Georgia, Kentucky, North Carolina, Oklahoma (east), Tennessee, Texas (east), Virginia

West: California, Colorado, Oklahoma (west), Oregon, Texas (west), Washington.

²Unless otherwise specified, data in this information sheet reflect operations with one or more goats.

³Operation size:

Very small: 1 to 9 goats

Small: 10 to 19 goats

Medium: 20 to 99 goats

Large: 100 or more goats.

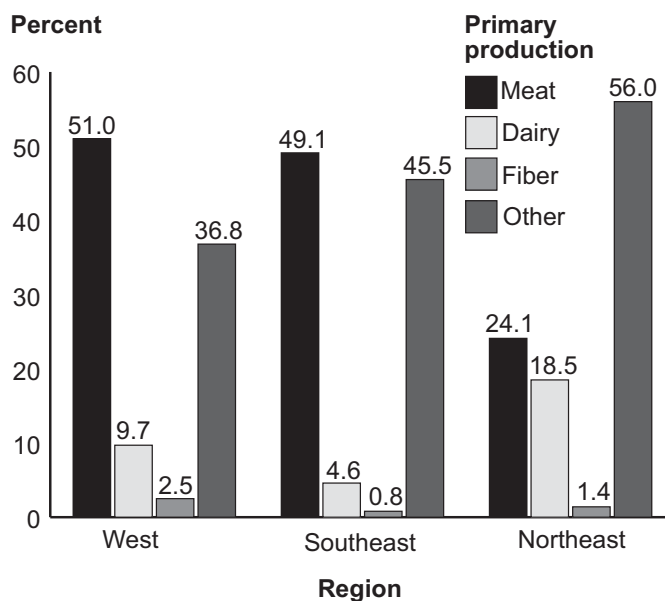
Milk production

Overall, 10.0 percent of U.S. goat operations focused primarily on dairy production; however, some operations that did not focus on dairy production had also milked does during the previous 12 months (July 1, 2008, to June 30, 2009); 13.5 percent of all goat operations had milked does during the previous 12 months.

Regionally,¹ nearly one-fifth of operations (18.5 percent) in the Northeast region kept goats primarily for dairy production, compared with 9.7 percent of operations in the West region and 4.6 percent in the Southeast region (figure 1). For milk-producing operations with 10 or more goats, average annual milk production was 1,399 pounds per doe; nearly half of operations (45.4 percent) had an average annual milk production yield of 1,500 pounds per doe or more.

In their prime, many dairy goats can produce 6 to 8 pounds (3 to 5 quarts) of milk per day, although this varies by breed. Nearly three-fourths of operations that had milked does during the previous 12 months (74.4 percent) fed doe milk to goat kids, and about two-thirds (66.9 percent) kept some milk for home consumption.

Figure 1. Percentage of operations by primary production and by region



Nearly half of dairy goat operations (43.5 percent) belonged to a national goat association or club, and about one-fourth (26.5 percent) belonged to a State/local goat association or club. In addition, 13.3 percent of operations with 10 or more goats that milked goats to produce milk or milk products participated in the Dairy Herd Improvement Association.

Reasons for raising dairy goats

The majority of dairy goat operations (52.9 percent) rated “personal consumption or use of meat, milk, or fiber, etc.” as a very important reason for raising goats. The percentage of dairy goat operations that rated source of income a very important reason for raising goats increased as herd size increased, ranging from 11.5, 25.3, and 84.5 percent of small, medium, and large operations, respectively. Overall, 16.8 percent of dairy goat operations rated source of income as a very important reason for raising goats. The percentage of dairy goat operations that rated fun/hobby a very important reason for raising goats decreased as herd size increased, ranging from 50.4, 41.4, and 8.9 percent of small, medium, and large operations, respectively. Overall, 44.1 percent of dairy goat operations rated fun/hobby a very important reason for raising goats.

Feed and pasture management

About half of dairy goat operations with 10 or more goats (46.7 percent) had managed goats on fenced farm (cultivated pasture) during the previous 12 months, and about one-quarter (27.9 percent) managed goats on fenced range (fenced, uncultivated pasture). About one of five dairy goat operations with 10 or more goats (19.5 percent) managed goats on dry lot; this percentage increased with operation size, ranging from 11.8 percent of small operations to 19.6 percent of medium operations to 51.0 percent of large operations. Only 1.1 percent of dairy goat operations fed only roughage (no concentrates, high protein feed, crop residue, by-product feeds, or commercial goat feed).

Milking procedures

In general, milking young goats before old goats and milking goats without mastitis before milking goats with mastitis is recommended to reduce new infections. The majority of operations with 10 or more goats (70.6 percent) did not milk their goats in any particular order; however, about half of dairy goat operations that had at least one doe with mastitis during the previous 12 months (53.6 percent) milked does with clinical mastitis at the end of milking in the milking unit.

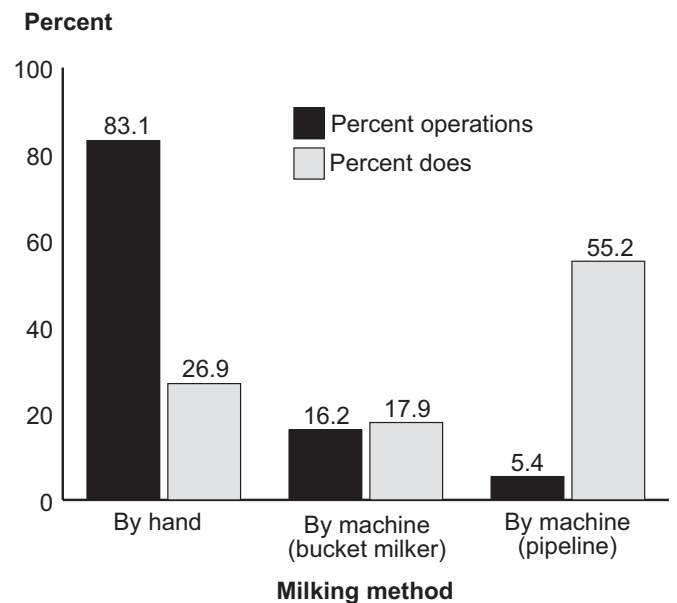
Three methods are generally used to milk dairy goats:

1. By hand, with the milk collected in a bucket.
2. By electric machines, with the milk collected in a bucket.
3. By machine in a parlor, with the milk collected directly into a pipe system and bulk tank.

For operations with 10 or more goats that milked does, the majority (83.1 percent) did so by hand (figure 2); 90.6 percent of small operations and 85.0 percent of medium operations milked does by hand. However, **the majority of does** milked (55.2 percent) were milked by machine in a parlor. When milking by hand, 11.9 percent of operations with 10 or more goats reported that milkers wore gloves when milking. About one-third of large operations (31.3 percent) milked does by machine in a parlor.

About one-fourth of all operations that milked does did so once a day (27.5 percent), while almost two-thirds milked twice a day (65.7 percent). Nearly 8 of 10 large operations (79.7 percent) milked 2 or more times per day, while two-thirds of small and medium operations milked 2 or more times per day (66.9 and 64.9 percent, respectively).

Figure 2. For operations with 10 or more goats that milked any does, percentage of operations (and percentage of does milked on these operations) by milking method



Milk quality

Note: This section refers only to operations with 10 or more goats.

Two major parameters monitored as indicators of goat milk quality are somatic cell counts (SCCs) and bacterial levels in milk. A high SCC can indicate mastitis or improper handling. Several tests are available to test the quality of milk. The California Mastitis Test (CMT) can be used to test individual goats for milk quality. The CMT provides a reasonably accurate measure of the level of genetic material from somatic cells in the milk. Grade A standards require an SCC of less than 1 million cells/ml. Milk from a healthy dairy goat herd can expect to have SCCs below 500,000 cells/ml.

Bulk tank somatic cell count (BTSCC) refers to the number of white blood cells (leukocytes) and secretory cells per milliliter in a pooled sample of milk from all animals in the milking herd. Milk from a mastitis-infected herd can expect BTSCCs with a CMT score of 1 or higher and SCCs above 1 million cells/ml.

Culturing milk will identify bacteria and helps direct mastitis therapy. Screening animals for contagious mastitis pathogens has many benefits and can prevent decreases in milk production caused by mastitis. The National Mastitis Council also has a program for reducing mastitis and SCCs. This program promotes correct milking methods, teat dips after milking, treatments of clinical mastitis, antibiotic treatment at dry-off, and culling animals that do not respond to treatments.

During the 12 months prior to the study, 20.2 percent of dairy goat operations had observed mastitis or udder inflammation in their herds. This percentage increased with herd size, ranging from 16.7, 33.8, and 52.7 percent of small, medium, and large operations, respectively. Approximately one-tenth of dairy goat operations (10.1 percent) evaluated BTSCCs during the 12 months prior to the study. Although goats tend to have higher SCC counts than dairy cows, 38.5 percent of dairy goat operations reported that their most recent BTSCC was less than 500,000 cells/ml and 85.7 percent reported a BTSCC of less than 1 million cells/ml.

Cleaning and disinfecting teats prior to milking reduces environmental bacteria on teat surfaces, bacterial counts in milk, and the incidence of new intramammary infections. Over half of dairy goat operations used an udder wash solution, disinfectant solution, or teat dip as part of premilking teat preparation in summer and winter (56.8 and 55.1 percent, respectively). The majority of operations in summer and winter (66.9 and 65.8 percent, respectively) used a single-use cloth or paper towel to dry teats before milking. Using a postmilking teat disinfectant reduces the incidence of contagious mastitis, but nearly half of dairy goat operations did not use any disinfectant for either summer or winter seasons (40.1 and 41.3 percent, respectively). However, 28.6 percent of dairy goat operations did use an antibiotic intramammary

therapy/infusion at dry-off for at least some does during the previous 12 months.

It is generally recommended that does have at least a 60-day dry period to allow their mammary systems enough time to prepare for the next lactation. Does that do not have a long enough dry period will have a lower milk production in the next lactation cycle. Over 90 percent of operations (91.3 percent) had an average dry period of 60 days or more.

Marketing

Goat milk or milk products are used for a variety of purposes. Of operations that had milked does during the previous 12 months, 74.4 percent fed doe milk to goat kids, 66.9 percent kept some milk for home consumption, and 21.4 percent sold or traded milk or milk products. A higher percentage of large operations (56.9 percent) sold or traded goat milk or milk products compared with small operations (19.3 percent). Of operations that sold or traded milk or milk products, 48.8 percent sold or traded milk for pet consumption, 41.8 percent sold or traded milk for human consumption, and 38.9 percent sold or traded milk for livestock consumption. All very small operations that sold or traded milk or milk products did so directly to the public, while only 39.8 percent of large operations sold or traded milk directly to the public. A total of 70.7 percent of large operations sold or traded to a wholesaler, dealer, or processor, compared with 11.4 percent of medium operations and 5.4 percent of small operations.

During the previous 12 months, one-fifth of operations with 10 or more goats (22.0 percent) that sold or traded goat milk routinely pasteurized (on-farm) milk intended for human consumption while over one-fourth of operations (28.3 percent) marketed unpasteurized milk intended for human consumption. Almost three-fourths of large operations that sold or traded milk or milk products (72.6 percent) sold or traded the milk cheese production. Of operations with 10 or more goats that sold or traded milk or milk products, some received a premium for high-protein content (17.5 percent), out-of-season milk (13.3 percent), low bacteria counts (11.0 percent), and low SCCs (8.6 percent).

Biosecurity and disease

Biosecurity is a system of practices designed to reduce the risk of disease introduction into a herd and to prevent the spread of disease within a herd. Virtually every disease results in productivity losses, and in some cases these losses can be substantial, particularly on larger operations in which more animals are at risk. In addition, milk production and milk quality can be affected.

About half of dairy goat operations (50.9 percent) heat treated colostrum before feeding to kids, compared with 47.1 percent of meat goat operations and no fiber operations. About one of four dairy goat operations (27.7 percent) normally only bottle fed kids, compared with 0.4

percent of meat, fiber, and “other” operations. A higher percentage of dairy goat operations than meat goat operations pasteurized milk for bottle-fed newborns (46.5 and 10.9 percent, respectively).

Of the 15.2 percent of all operations with 10 or more goats that added goats during the previous 12 months, a higher percentage of dairy goat operations required individual animal testing of new goats for caprine arthritis encephalitis (33.2 percent) and brucellosis (15.9 percent) compared with meat or “other” operations (2.7 and 1.8 percent and 4.7 and 0.8 percent, respectively).

Summary

The majority of large dairy goat operations raised goats as a source of income. Personal consumption or use of meat, milk, or fiber was also a common reason for raising goats. For many smaller operations, fun/ hobby was a very important reason for raising goats.

Most operations fed doe milk to goat kids and kept some for home consumption. Larger operations commonly sold or traded milk or milk products for animal or human consumption and typically sold or traded to wholesalers, dealers, or processors. Smaller operations commonly sold or traded milk or milk products directly to the public.

Most dairy goat operations milked does by hand; however, the majority of does were milked by machine in a parlor. Milking does twice per day was the most common milking frequency. Milking order was not important to most producers, except for does with clinical mastitis.

Of the dairy goat operations that had evaluated bulk tank somatic cell counts (BTSCC), the majority had milk below the 1 million cells/ml required for Grade A milk. Nearly 40 percent of these operations had BTSCC less than 500,000 cells/ml.

In general, dairy goat operations observed better biosecurity than other types of goat operations. Biosecurity is important to ensure good milk quality and to keep milk production high, which may be why dairy goat operations had a higher level of biosecurity.

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