United States Department of Agriculture

Animal and Plant Health Inspection Service

Veterinary Services

Bulk Tank Milk Somatic Cell Counts and Your Milk Quality Assurance Program

The Milk and Dairy Beef Quality Assurance Program[1](MDBQAP) was designed to educate producers about the importance of quality milk and meat free of adulterants and residues. A recent national study found a relationship among MDBQAP participation, lower somatic cell counts (SCC), and increased milk production.

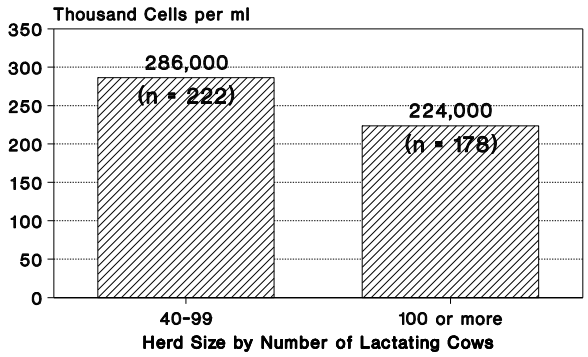
The U.S. currently lacks a national assessment of milk quality. In 1989, the National Mastitis Council's Milk Quality Monitoring Committee released a National Dairy Herd Improvement Association Somatic Cell Count Summary (DHIA SCC) with state-level estimates. While these data are reflective of DHIA SCC's voluntary participants, it may not represent the national dairy herd.

In May of 1993, the U.S.D.A.'s National Animal Health Monitoring System (NAHMS) conducted a study in conjunction with Rockwood Research of St. Paul, Minnesota, to identify health and management levels in the dairy industry. Specific objectives were to assess associations between SCC and completion of the MDBQAP.

The study included 400 farms from 21 states. These states account for 80 percent of the milk cow operations in the U.S. Participating operations were chosen randomly from FARMAIL, a data base of Farm Journal, Inc., so that the results would be representative of subscribers with 40 or more lactating cows. This group of herds does not necessarily represent the national dairy herd.

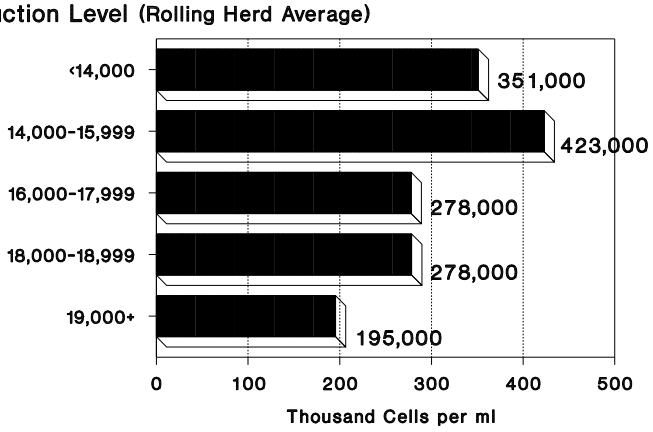
The average somatic cell count of milk from all participating producers was 257,000 cells per ml. Figure 1 shows that the mean for larger herds (100 or more lactating cows) was 224,000, lower than the mean for smaller herds (40 to 99 lactating cows) at 286,000.

Figure 1. Average Bulk Tank Somatic Cell Count by Herd Size



Average SCC varied widely by production level, but lower counts were associated with higher milk production. Study herds producing 19,000 pounds of milk per cow or more (rolling herd average) had an average somatic cell count of 195,000, while herds producing less milk per cow had significantly higher average somatic cell counts, as shown in Figure 2.

Figure 2. Bulk Tank Somatic Cell Count by Production Level



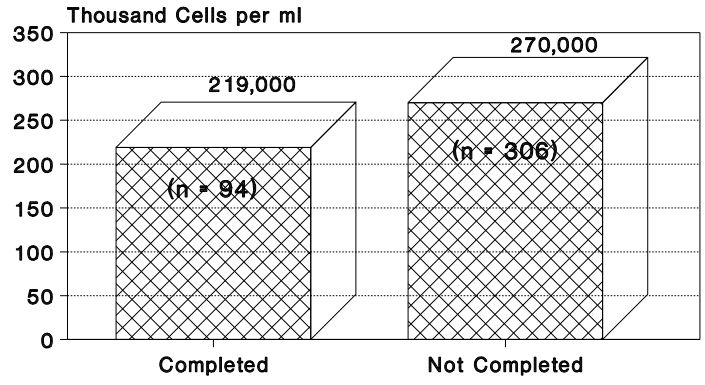
1 A voluntary milk quality and residue avoidance program sponsored and developed by the American Veterinary Medical Association (AVMA), National Milk Producer's Federation, and the USDA's Cooperative Extension Service (CES).

SCC also varied by region (Figure 3). The western region had the lowest average SCC (170,000), and the south had the highest (356,000). This variation was likely associated with management practices associated with higher production due, at least in part, to the high average production levels in the west: milk yields per cow above 19,000 were reported by 62 percent of western producers and by only 16 percent of southern producers. Interestingly, participation in the MDBQAP varied by region. Thirty percent of the producers in the western region completed the program compared to a low of 16 percent in the southern region.

Figure 3. Average Bulk Tank Somatic Cell Counts by Region (Cells per ml)

NAHMS study results showed SCC differed between participants and nonparticipants in the MDBQAP (Figure 4). Average SCC of milk from producers that completed the MDBQAP (219,000 cells per ml) was significantly lower than the average SCC of those who did not complete the program (270,000).

Figure 4. Average Bulk Tank Somatic Cell Count for Producers Who Completed or Did Not Complete the MDBQAP*

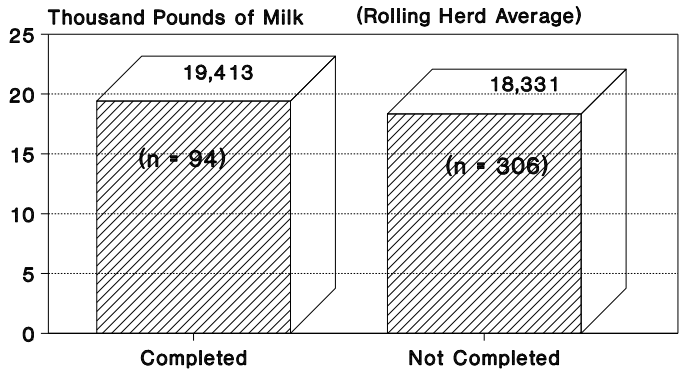


*Milk & Dairy Beef Quality Assurance Program

Figure 5 shows that the rolling herd average production level for the producers who completed the MDBQAP was greater than for others (19,413 and 18,331, respectively).

This study provides an indication that management practices used by dairy producers that completed the MDBQAP are associated with a higher quantity of higher quality milk.

Figure 5. Average Milk Production for Producers Who Completed or Did Not Complete the MDBQAP*



*Milk & Dairy Beef Quality Assurance Program

For more information on the National Dairy Heifer Evaluation Project and other NAHMS programs, please contact:

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