

Teat Dip Program in Armenia

By Dave Slusser, Advisor Rural Development, CARD, 1 July 2005

Three years ago in the milk marketing cooperatives of Tolors and Akhlatyan a crisis occurred. Both villages lost their milk market because the acidity levels of their bulk tank milk readings were 26 and 27 points respectively. The cut off reading was 21 points. The acidity test measures milk spoilage and it was and is the main test in Armenia to evaluate milk quality. The Director of USDA-MAP sent my wife and I to these villages to clean up their milk. We spent 6 weeks in these two villages, and lowered the two villages' acidity test to 16 and 17 points respectively.

What we did to make Tolors and Akhlatyan producers of the best milk in Armenia. We were at the milk collection center each evening as the coop members brought their milk. Each time a member's milk was rejected; we went back with him or her to their barns and using the California Mastitis Test (CMT) checked every quarter of every cow for mastitis. In every case of member-rejected milk, we found cows with mastitis and we recorded the positive cows and quarters. Because we were concerned that the village farmers might misuse antibiotics, we choose to try a different method that we knew would work on many environmental mastitis infections. That was frequent milking every two hours, day and night for two days. We also introduced an iodine teat dip to these villages. The occurrences of mastitis dramatically dropped resulting in the lowering of the cooperatives bulk tank acidity test.

Milking procedures

After the cows were washed, cleaned and dried, the milkmaid would pre-dip the teats with a commercial iodine teat-dip. After 15 to 30 seconds the teats were blotted dry with a piece of (clean) toilet paper, and the cows were milked by hand. Following milking, the teats were dipped again but not blotted dry. This process helped control the introduction of environmental bacteria into the teat canal during the milking process and following milking, and allowed the cows' immunity system to clean up the mastitis. On cows with mastitis, this process was repeated every two hours for two days. On healthy cows, this process was repeated at each milking twice a day.

The Challenge

Over the next two years after the Tolors and Akhlatyan success, other USDA-MAP clients introduced teat-dipping to their farmers. The commercial iodine teat-dip was imported by USDA-MAP from Europe and distributed to all USDA-MAP clients and cooperatives as requested, but at too great an expense for farmers or their cooperatives to purchase from their own earnings. In order to provide a sustainable solution, a new approach was needed.

Something Old, yet something New

Thirty years ago before commercial teat-dips were available, Penn State University suggested that dairy farmers try teat-dipping their cows with a mixture of clothing bleach (Clorox), glycerin, and tap water. This mixture was used successfully on the Slusser Dairy Farm, and it was very inexpensive. With the assistance of Arman Ohanyan, Extension Dairy Specialist, and the Elita Milk Marketing Cooperative Clinic Veterinarian, a six week trial was done using ACE Clothing bleach (available in any village store), glycerin, and water. Via the Internet, a goat farmer from Texas suggested replacing the glycerin with dishwasher detergent. The trial has been completed and the results are:

There was a 60% drop in mastitis in the test cows. In the control cows, there was very little change. There were only 5 cows in each group.

The teat ends show no change from the beginning of the trial to the end. Therefore, the solution was not too strong to cause burning or chapping.

The teat ends in the control cows were actually in poorer condition than the test cows at the end of the six-week trial.

The solution once mixed is unstable; therefore after mixing it needs to be stored in a closed bottle and out of sunlight.

At milking time, pour enough solution into a cup, or teat dip dispenser to properly dip the teats. One cup if kept clean can easily pre and post dip 20 cows.

At the end of milking all cows, discard the solution, or if it becomes dirty during milking discard. Always start each milking with new solution from the bottle.

The Next Step

Two people have been taught and licensed to mix the teat-dip, the staff veterinarian at the Elita Milk Marketing Cooperatives' vet clinic, and a wife of one of the board members of Tolors Milk Marketing Cooperative. Since the Elita Vet clinic veterinarians make monthly herd health visits to each of the coops members, and test each cow for mastitis as part of their service, we have asked them to record which farmers are buying the teat-dip. By checking the Vet Clinic records, we can determine the impact on a large group of cows. The Tolors Coop does not have veterinarian services. Arman Ohanyan is visiting each cooperative periodically to check on the person licensed to mix the teat-dip, and check the cows of those buying the teat-dip.

If the second phase of the trial goes well, Arman Ohanyan will train and license one person at each of the remaining milk marketing cooperatives, and at the dairy plants. Wide spread use of this affordable teat-dip by the farmers selling milk to cooperatives and milk plant clients of CARD could result in a major improvement in cheese and dairy product quality in Armenia.

Cost Comparisons

Imported Iodine Teat-dip - \$1.60 per 20 cows

Domestically available Teat-dip - \$0.64 per 20 cows

Bleach based Teat-dip - \$0.02 per 20 cows

The Cooperative will buy the ingredients at the village store, and the Board of Directors will determine the price charged to members for the teat-dip.

Teat-Dip Solution

1 liter of clean water, 3 table spoons of Ace Bleach, a big drop of Doria Dish Soap