

Somatic Cell Counts:

A Great Tool . . . But

There is no doubt that the testing for somatic cell counts in cow milk has been a great tool to combat mastitis, both clinical and sub-clinical, and it is a practice widely accepted around the world. In addition, the demands of health officials for higher standards of milk quality has greatly aided the image of milk as a healthy food.

The arbitrary upper allowable level of 1.5 million per milliliter of milk was successfully reduced to 1.0 million a few years ago and then to 0.75, but in Europe the level has been set even lower — 0.4 million. Now the debate is ongoing about whether the U.S. standards also should be that low or when.

Many U.S. dairy farmers are already below that level most of the time with most of their cows. In general, they would probably have no problem in compliance for the bulk tank test. Individual cows, however, would not always be below that level. And the question arises, should such cows be treated or culled?

A more pertinent question, however, concerns the reliability of somatic cell counts indicating mastitic conditions. What if a cow has high somatic cell counts but tests negative for any pathological conditions in the udder? Recent research at different universities has shown that this situation can and does happen. Up to 40 percent of misdiagnoses have been reported in the literature.

Our own research at the Univer-

sity of Delaware has demonstrated that somatic cell counts are not always influenced by pathological but also by non-pathological causes. This is very important to know, because tank tests above the level of 0.75 million somatic cell count per milliliter milk are used by officials to deny a farmer the sale of milk for fluid use.

In some areas the somatic cell count is also calculated into the payment scale to the farmer. Fortunately, most U.S. cow dairy farmers have a breeding program, which adds newly fresh cows to the herd tank every month. Unfortunately for most U.S. dairy goat farmers, their breeding of the mostly seasonal goats (in contrast to cows), means that fresh goat milk goes into the tank only in the spring season, while at end of summer and during fall and winter most goats are putting late lactation milk into the farm tank.

Why is stage of lactation a factor? It has been shown that somatic cell counts rise normally at the end of lactation, even in cows and especially in goats, without any relationship to pathological conditions. It is a normal physiological condition and has nothing to do with mastitis.

Another non-pathological factor is estrus in cows and, again, in particular in goats. Estrus does increase dramatically the somatic cell counts in most cows and goats. Fortunately for cow farmers, their breeding program calls for only a few cows to be in estrus every month. Unfortunately for dairy goat farmers, their breeding

is seasonal — in early fall — for all goats in the herd. Thus the rise in somatic cell counts in the goat farm tank can be dramatic during this time without having any relation to mastitis.

One more non-pathological factor is milking procedure. There is extensive data showing that the last portion of milking goats is high in somatic cell counts normally, especially after hand stripping and more for hand milking than machine milking.

Fortunately for cow farmers, most do milk by machine and in recent years have ceased to hand-strip after milking. Unfortunately for dairy goat farmers, few milk by machine and most believe in extensive hand stripping, even when machine milking. So higher levels of somatic cell counts have nothing to do with mastitis in this case; it is a normal condition.

Treating dairy goats with the same rules as have been developed for dairy cows is a new problem beginning to be understood by officials. The reason is physiology. Milk secretion physiology in goats differs significantly from that in cows. The process in the cow udder is a gentle squeezing of the milk out of each tiny secretory cell, called merocrine secretion.

In the goat udder, the secretion is not just a squeezing the milk out, but part of the secretory cell is also broken down in the process of secretion, which in this case is called apocrine. The result is that many cell particles are in goat milk and counted as somatic cells;

in cow milk, typically, there are few, and somatic cell counts are more representative of leucocytes. Leucocytes enter the udder only when there is an inflammation, pathogenic invasion or mechanical squeezing, stress, or estrus hormonal effects.

Thus, while most instruments testing for somatic cell counts are adequate and appropriate for cow milk, they are not for goat milk. To be appropriate for goat milk,

the instrument must be calibrated with goat milk, not cow milk, and the test must not count cell particles but only leucocytes. Furthermore, the instrument must be adjusted seasonally to account for the normal seasonal rise of somatic cell counts in goat milk.

Thus, while somatic cell counting is potentially a great tool for high-quality milk production and better profits for the dairy farmer, it must be understood and applied appropriately and judiciously.

Farmers Rank High

(Continued from Page A34)

those opposing restrictions was that there simply should be no government interference (19 percent).

Other significant findings from Farm Bureau's 1999 Farmer Image Tracking Survey were nearly identical to results from the 1997 survey, including consumer agreement that:

- Farmers care about the quality and safety of the food they produce, 81 percent, down one point from 1997.

- The use of land for agriculture is good for the environment, 70 percent, down one point from 1997.

- When faced with a conflicting decision between financial considerations and doing what is right, most farmers would do what is

right, 62 percent, up three points from 1997.

The 1999 tracking survey was conducted by telephone with a national, random sample of 500 consumers. Based on the sample and a 95 percent degree of confidence, the overall study precision is plus or minus 4.4 percent. The poll was conducted by Marketing Horizons, Inc., a professional polling firm headquartered in St. Louis.

Copies of the full survey and comprehensive results are available for \$12 each. To order, contact American Farm Bureau Federation's Gail Przybek by phone, (847) 685-8850 or fax, (847) 685-8950.



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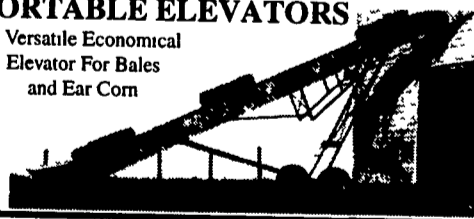
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