

QUESTIONS FROM OUR READERS

Simple test for somatic cell?

Is there a simple way to measure somatic cell counts?

TENNESSEE

D. W.

Until recently, the California Mastitis Test (CMT) has been the only reliable cowside screening test for detection of subclinical mastitis. Consider the CMT positive when even slight thickening occurs.

Recently, several new cowside tests for enumeration of somatic cells have become available. One test is called the Direct Cell Counter (DCC) and is marketed by DeLaval. This device consists of a portable meter about the size of a bread machine. Disposable cassettes are filled with approximately 1 ml of fresh milk, stained automatically in the cassette, and read in the meter.

We compared results of SCC of quarter milk samples ($n = 800$) between the DCC and traditional laboratory methods and determined that the DCC is quite effective at counting cells. In fact, the agreement with traditional methods of counting somatic cells was 92 percent.

Another new cowside test is called the PortaSCC and is marketed by PortaCheck. The test consists of a small strip that is inoculated with a drop of milk and a reagent. The test strip requires a 45 minute room temperature incubation and is read in a small handheld meter.

We recently used this product to evaluate 300 quarter milk samples obtained from cows located on 10 separate dairy farms and determined that the correlation with traditional cell counting was 81 percent.

Both of these tests appear to be significant improvements over the CMT because they are able to more accurately detect somatic cells at much lower thresholds than the CMT test is able to do, and both remove the subjective aspect of visual observation. However, both cost more than using the CMT, so the financial aspects of using the tests will be dependent upon the value of the information gained.

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Double breeding cows

Our neighbor often uses two units of semen from two different bulls at the same service on cows past the third service. When using Holstein and Jersey semen, the calves are more often Holstein. Is this simply a random occurrence?

WISCONSIN

C.G.

In answer to your question, yes, there has been some research done in this area. A joint study done last year by Virginia Tech and the University of Kentucky looked at 460 calves sired by semen mixes of four Holstein and four Jersey bulls. Each bull was paired up with one from the other breed to create 16 mixes. The study showed that cattle inseminated with a mixture of semen from one Holstein and one Jersey bull (two bulls of different breeds with an equal number of sperm) resulted in a disproportionate number of offspring sired by the Holstein bull. A bull's ability to sire a calf when semen is in competition from another bull and a bull's individual conception rate based on ERCR at time of semen collection appeared to be linked. Bulls with superior individual conception rates when used alone tended to be superior in this study when the cow was bred with semen including that bull in the mix.

The eight service sires in the study were all evaluated on the DNA Fragmentation Index (DFI) and Plasma Membrane Integrity (PMI) and for three other tests. The DFI test and PMI test accounted for 87 percent of the variance among the service sires in their ability to successfully fertilize the egg in competition with another bull of the other breed.

With this in mind, no bull combination was more successful than another in getting cows bred. However, the four Jersey bulls used in this study didn't fare well on the DFI and PMI tests, and they only accounted for 30 percent of the 460 calves. Cow fertility and environment also play a major role in conception success.

— BENNET CASSELL
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