

## Reducing leucocytes in milk

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NEWARK, DE — After July 1, 1986, somatic cell counts (SCC) above 1 million per milliliter (ml) in milk from a farm will halt further milk shipments from that farm!

Somatic cell counts over 1 million per milliliter mostly mean leucocytes or white blood cells in a tank load of milk. They are signs of infection, irritation or stress in the udders of some or many cows in the herd shipping that milk.

Some researchers say that stress alone won't increase somatic cell counts in milk; infection must be present. However, no cow's udder is sterile inside. Potential infection-causing microorganisms are always present inside the teats and other parts of the udder. Many more are waiting outside to march in or to be sucked in at least twice a day.

Some of our research on the University of Delaware Agricultural Experiment Station dairy herd indicates the possibility of increased somatic cell counts in the milk of some cows whose udders, when sampled and cultured, are found to be negative for pathogens. We've even found that estrogens can increase somatic cell levels — for example, on the day a cow comes naturally in heat, after she receives an estrogen injection for estrus synchronization or for embryo transfer work. Even moldy feed such as silage, hay or just stale grain can affect SCC levels, because moldy feeds have estrogenic activities.

We've also found that SCC in the Delaware dairy herd are often higher in the last milk when the udder is vigorously massaged empty, in the milk of fresh cows for the first five days and in the milk of

cows during the last month before drying off.

All of which means that reducing leucocyte counts in milk requires us to adopt a strategy that reduces leucocyte counts in tank milk to be shipped by sidetracking the other milk for on-farm uses — such as feeding calves and pigs — until cows with high counts have straightened out, as checked by individual SCC testing.

The point I want to make is that not all high SCC cows need treatment or butchering. Here are some steps you can take to pinpoint and quickly solve the problem without losing a good cow:

- Change feed rations away from known or suspected moldy feed sources or suppliers.
- Test rations for zinc levels, and probable zinc absorption levels. In some cases, response to supplementary zinc will be quick.
- Check every cow's teat ends

for inversions due to faulty milking equipment and procedure. Correct these mechanical causes.

• Here in our Delaware dairy herd we are working with the most recent innovation of quarter-milking rather than udder-milking. Soon this concept will be commercially available as another powerful tool to reduce cross-udder infections and elevated SCC.

• Check your milking parlor for possible stray voltage — after washing udders, when electric conductivity is much increased.

• Try to switch to dry milking by clipping udder hair often and keeping cows clean all day, to eliminate the need for udder washing.

In recent Wisconsin studies, only 23 percent of high SCC were cured by antibacterial treatments. This underlines the fact that other remedies than antibiotics can often be more effective. This includes regular, complete and clean teat dipping, no slipping of teat cups with vacuum searching, perhaps even use of automatic teat cup removers and backflushing.

Lowering leucocyte counts may also include genetics, which we've ignored since we succeeded in selecting our cows against those bell-shaped teats and pendulous udders of former years. New North Carolina studies show less SCC in cows with pointed teats than with round, flat, disc shaped or worst, inverted teat ends — especially in the rear quarters.

And new Wisconsin studies show that somatic cell counts differ

between daughters of different bulls. So in the future we may see USDA indexes for SCC on bull proofs along with the familiar ones for milk, fat and protein.

Finally, labor incentives may become effective tools in reducing leucocyte counts. Just as a premium payment from the milk processing plant is a good incentive to the herd owner, so low-SCC incentive pay plans to herdsmen and milkers should work.

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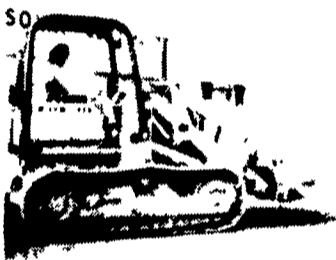


University of Delaware senior Mary Thompson has won a scholarship from the Delmarva Corn and Soybean Technology Conference. An entomology major, she plans a career in integrated pest management.

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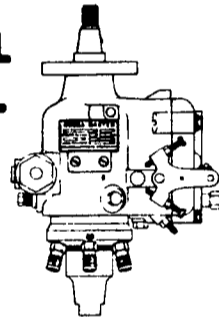
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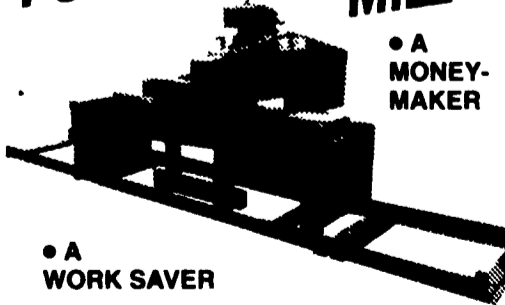
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