

# How somatic cell counts help dairymen beat mastitis

MINGOVILLE — Joe Stringer's Sand Ridge Farm looks like the average Pennsylvania dairy operation. Metal buildings have replaced on old bank barn, cats wander in and out of a milking shed, and sixty-five black-and-white Holsteins stand in the barnyard.

But there's a difference. Stringer's is a prize-winning herd. It produces large volumes of high-quality milk, and few of its cows are plagued with mastitis, a bacterial udder infection that can hold a milker 10 to 15 percent under her potential.

Stringer is one of 5000 dairymen belonging to the Dairy Herd Improvement Association, which offers production testing and other

services to upgrade dairy herds. One program, somatic cell counting, is performed at Penn State's Central Milk Testing Laboratory and helps dairymen identify cows with mastitis.

Says Stringer, who farmers near MingoVille in Centre County, "Often you'll have a cow you swear should be giving more milk. She'll look fine, but she just won't produce. Sometimes mastitis is the answer."

He adds, "The cell program has been profitable. Whenever you cut the time cows are affected by mastitis, you increase your output."

In the last three years, Stringer's annual herd average has jumped from 14,700 pounds of milk per cow to

17,700 pounds. Part of the credit, he feels, should go to DHIA services, including somatic cell counting.

Veterinary scientist Dr. Robert J. Eberhart directs SCC research at Penn State. At the heart of the program are three somatic cell counters, complex machines that count the actual number of cells in a milk sample.

Each machine can test 180 .2-ml samples per hour. A sample is diluted, and dye is added to it.

The dye concentrates in the nuclei of somatic cells (body cells, including infection-fighting leukocytes and udder tissue cells), which spread onto a rotating stainless steel cylinder.

When filtered light shines on the sample, the dyed cells fluoresce, and sensitive devices count them. Cell counts indicate whether or not a cow has mastitis: the more cells, the greater the probability of infection.

Mastitis strikes glandular tissue in the udder, reducing milk quality and output. Most forms do not affect the appearance of a cow or her milk, and until recently could be identified only by expensive laboratory testing. Now somatic cell counting does the job for twelve cents per sample.

In Pennsylvania, about a third of the state's 15,000 herds belong to the DHIA. Each month, the association checks output of every milk-

ing cow in a participant's herd.

A milk sample from each animal goes to Penn State, where it is tested for fat content. Now, samples from 72,000 cows in 1,600 herds also receive SCC screenings.

Says Eberhart, "The DHIA sends test results back to the dairyman, telling him which of his cows are good producers and which may have mastitis. If a cow has a high cell count, the dairyman monitors her closely. If the condition worsens, he takes her off the

production line and gives her antibiotics.

"All cows with high cell counts should be treated with antibiotics at the end of lactation, so they can begin their next lactation with infection-free udders," continues Eberhart.

"In some cases, we recommend treating cows in early lactation on the basis of high cell counts, but we need more data on the value of such treatment," he says.

In addition to antibiotics, mastitis control also includes proper use and maintenance of milking machines, and dipping a cow's teats in a germicidal solution after each milking to kill any bacteria transferred from another cow by the milking machine.

The SCC program went into effect statewide in January, 1978. Before that, Eberhart, veterinarian Lawrence J. Hutchinson, and dairy specialists Herbert C. Gilmore and Stephen B. Spencer ran an 18-month study on the program's potential, under Agricultural Experiment Station funding.

The researchers worked with DHIA member herds.

Two hundred from Lancaster and Bradford counties were designated pilot project herds; their managers received monthly cell counts on all cows and attended meetings on how to interpret and use SCC data.

Another 200 herds from all over Pennsylvania were con-

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Vet Robert Eberhart, right, confers with Centre County dairyman Joe Stringer. Stringer's is one of about 5000 Pennsylvania herds tested each month for subclinical mastitis in Penn State's somatic cell counting program.

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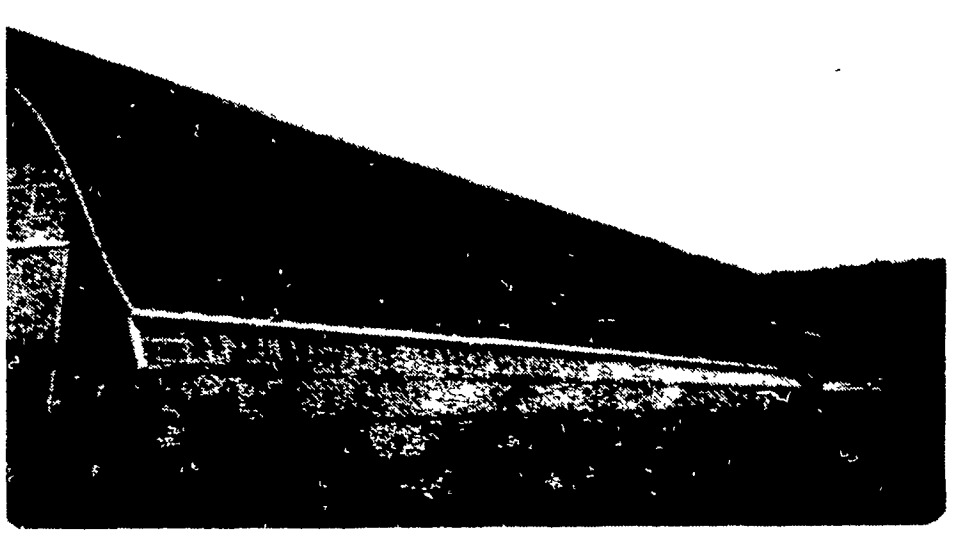
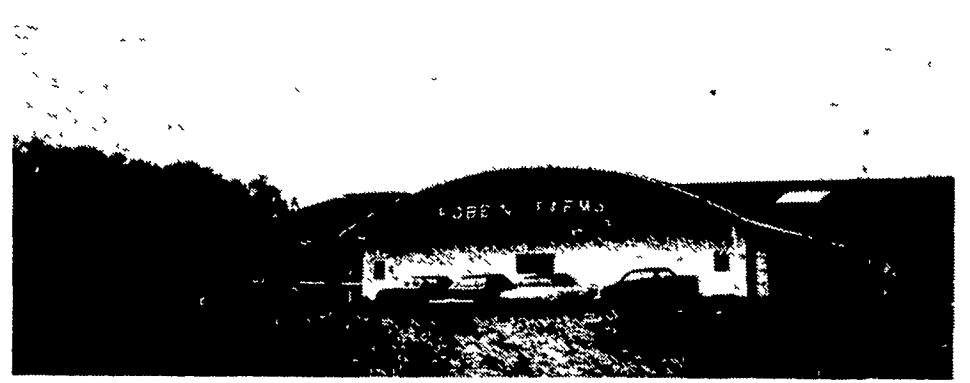
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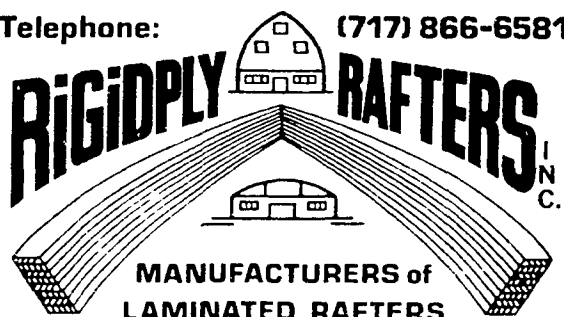
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