

DAIRY PIPELINE

Department of Dairy Science

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PI COUNTS

Preliminary incubation (PI) count is becoming an increasingly popular measure of milk quality. The PI test is especially sensitive to psychrotrophic bacteria. These particular bacteria are capable of growing at colder temperatures, which is why dairy processors are encouraging farmers to maintain a low PI count.

Cold-tolerant bacteria produce enzymes during chilled storage that can damage both the milk protein and fat, leading to decreased milk quality. Furthermore these enzymes can survive pasteurization and potentially decrease the milk's shelf life.

The name of the test is indicative of the method used to determine the count. PI count of milk is determined by incubating a sample at 55° F for 18 hours. A sample of the “pre-incubated” milk is then cultured for the stan-

dard plate count or SPC.

Interpretation of a high PI count is difficult without a corresponding SPC. For instance, a high PI count and a low SPC could indicate a pipeline/tank cleaning problem, refrigeration problem or poor udder cleaning. A high PI and high SPC could indicate a mastitis problem—a determination which could be reinforced by examining the somatic cell counts of both the herd and individual cows.

The PI count of a given sample will generally be higher than the SPC. Following are guidelines for the goal and levels for PI Counts.

—M. Chase Scott
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<10,000 cfu/ml Target	10,000 –50,000 cfu/ml Acceptable	50,000> cfu/ml Concern!!
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HEIFER MASTITIS PREVENTION AND CONTROL

As you look out over your heifer crop with great anticipation, do you ever stop to wonder: How many of these future herd replacements are harboring an intramammary infection? How will these heifers affect my somatic cell count and the udder health of my current milking herd? How many will freshen with mastitis or a blind quarter? Recent research has shown that anywhere from 8 to 90 percent of all heifers harbor some type of intramammary infection prior to calving. The prevalence of those intramammary infections is related to issues such as overall herd infection status, housing conditions, fly control programs, climate, and time of year.

The economic losses due to mastitis and high cell counts are well documented but may actually be higher in heifers than in older cows. If the infection occurs while the mammary gland is still developing extensive damage can be done to developing secretory tissue, resulting in her never being able to meet her genetic potential. Losing a first calf heifer, having a heifer lose a quarter or develop a light quarter, or just a reduction in her potential for milk production at this point in her productive life is a major loss because all the rearing costs have

been invested with no returns or reduced returns on the investments made.

So how do we reduce the risk of this happening? Developing a heifer mastitis prevention plan is critical. The plan must include diligent management and early detections in all ages of heifers from birth to calving. Start by segregating cows from calves which will reduce the chance of passing mastitis causing pathogens by the suckling of dirty udders or infected cows. Colostrum or waste milk from infected cows or cows with unknown status should not be fed to calves. If feeding whole raw milk to heifer calves consider pasteurization. Remember that feeding pooled milk increases your biosecurity risks, and that the pooled milk may increase the spread of Johne's in your herd as well. Take measures to reduce the chance that calves with suckle one another.

For heifers of all ages, provide a clean, dry environment. It has been well documented that flies can contribute greatly to spread of intramammary infections so an effective fly control program is essential. This program should include routine maintenance in housing and feeding areas to reduce the build-up of manure and spoiled feed which are excellent breeding

Upcoming Activities

2006 Area Dairy Conferences:

Dec. 11—

Wardsboro Ruritan Club, Rocky Mount. Contact Marilyn Clements at 540/483-5161

Dec. 12—

Best Western Inn, Culpeper. Contact Carl Stafford at 540/727-3435

Dec. 13—

Montezuma, Rockingham County. Contact Tina Horn at 540/245-5750 or John Welsh at 540/564-3080

Dec. 14—

Southern Piedmont AREC, Blackstone. Contact Cynthia Gregg at 434/848-2151 or Ron Duvall at 434/645-9315

Cow College dates are Feb. 26—28.

Details will be posted on VTDairy as soon as they are available.

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If you are a person with a disability and require any auxiliary aids, services or other accommodations for any Extension event, please discuss your accommodation needs with the Extension staff at your local Extension office at least 1 week prior to the event.

grounds for flies. Fly control products such as pour-on insecticides, sprays, and ear tags are also effective if managed properly and applied on a timely basis. Vaccination programs and antibiotic treatments have also proven to be a

useful tool in preventing or managing intramammary infections in heifers.

—Tina Horn

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RECORD SIRE ID'S PROPERLY FOR CROSSBRED ANIMALS

This note is for producers who record services in their herds using PCDART (most details apply to other systems as well) or to DHI technicians.

Many dairy producers are doing some crossbreeding these days. Proper sire ID on crossbred matings is critical to compare crosses to purebreds later on. Report the service sire and breed as for a purebred mating. A service to the Brown Swiss bull "Beamer" would be recorded as sire ID 206B10. Since this is a cross-referenced NAAB sire number, computing systems like PCDART will automatically recognize the breed of the sire. As long as the ID of the dam is complete, DHI will be able to keep track of the pedigree of the resulting calf

by combining Beamer's pedigree with that of the dam. The breed composition of the calf can be created from the pedigree data, even though the calf appears as breed code "X". If a sire registration number is entered instead of an NAAB number (as for certain International dairy breeds), the breed of the sire must be entered as well. This is a critical step in the identification process, as an incorrect sire breed invalidates an otherwise accurate sire ID. PCDART accepts Normande - N, Norwegian Red - R, Red Angler - F, and Montbeliarde - C. Swedish Reds, however, do not yet have a breed code in PCDART, though they may in other systems. In

PCDART, record a Swedish Red service sire such as 91213 Peterslund with 91213 in the sire ID field and sire breed code of "A". Swedish Reds are NOT Ayrshires, but the DRMS Raleigh system will properly record this service entered this way to Peterslund.

"This is an important time for the dairy industry to focus on proper identification of crossbred animals."

This is an important time for the dairy industry to focus on proper identification of crossbred animals. There are a lot of crossbreds in heifer lots and a growing number have already calved into dairy herds. Properly recorded sire ID's on crossbred matings are essential to track the performance of crossbreds.

Without proper identification, there is no good way to track performance of these animals. Producers are en-

couraged to enter crossbred services correctly, and also to verify proper sire ID's of crossbred heifers as they freshen into the herd. Use the same system if ID is incomplete at freshening. Dams of crossbreds also need to be fully identified by breed and sire (also date of birth) to complete the pedigree and assign crosses to proper crossbred groups. Proper ID on crossbreds will enable genetic evaluation systems to compare crosses to their purebred contemporaries.

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For more information on Dairy Extension or to learn about current programs, visit us at VT Dairy—Home of the Dairy Extension Program on the web at: www.vtdairy.dasc.vt.edu.

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