

DAIRY PIPELINE

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Special Edition: Summer and the Dairy Cow

PREVENTION IS KEY WHEN DEALING WITH MASTITIS

—Christina Petersson-Wolfe, Extension Dairy Scientist, Milk Quality & Milking Management; cpw@vt.edu

Summer heat and humidity create the perfect environment for mastitis-causing bacteria, yeasts, and molds to thrive. While it's true we can't control the weather, there is much producers CAN do to manage the situation. With mastitis costing the dairy industry approximately \$2B/year, it's worth the extra effort to implement prevention and control measures.

Since many bacteria are transferred at milking time, it's a good idea for all personnel to review basic milking hygiene practices (fore-stripping, pre-dip and post-dip applications, individual rather than shared paper towels, gloves while milking, etc.) and get serious about adherence. Treatment varies depending on the pathogen, but in this case that old adage "An ounce of prevention..." is absolutely true, as there is no treatment for some cases.

Additional prevention strategies include: attention to bedding, calf management, dry cow management, milking equipment maintenance, testing new herd mates, cow

nutrition, proper infusion techniques, and even milking order of infected cows. Use of the DHIA 'Hot Sheet' and culling can be critical strategies for combating mastitis. There are many well managed farms with low somatic cell counts year round, proving mastitis control is possible even during the summer.

Varying treatment protocols make it imperative to figure out which pathogen is causing the problem. You can't treat it if you haven't identified it! As a result of differing management practices from farm-to-farm, each herd has its own bacterial profile. Once the bacterial profile is identified, control programs can be implemented. If you would like more information on milk sampling or culturing, contact The Virginia Tech Mastitis & Immunology Lab at 540-231-4767 or cpw@vt.edu.

To learn more about mastitis prevention and control visit <http://www.pubs.ext.vt.edu/author/p/petersson-wolfe-christina-res.html> and <http://sequitymilk.com/resources/>.

SIMPLE STRATEGIES TO REDUCE THE NEGATIVE IMPACTS OF HOT WEATHER

—R. E. James, Extension Dairy Scientist, Dairy Nutrition; jamesre@vt.edu

Each year it's not unusual to see production drop 10-15 lb. per cow. Waiting until hot weather subsides is not an effective management plan as milk production lost is never regained once things get cooler. Here are some strategies to alleviate summer heat stress.

► Pay special attention to close up cows. Feed bunks must be covered to prevent spoilage from summer sun and soaking from thunderstorms. Fluctuation of intake prior to calving has very undesirable effects on successful transition to the milking herd and peak milk yield. Shade cloths can provide economical temporary solutions.

► Provide cow cooling with 36–48" fans 20' apart and 8' off the ground angled at 15 to 25° downward. Above the feed lanes place soaker nozzles (10 psi, 180° spray) 8 ft. above the cows and immediately below

the fans. Sprinklers run on a timer that soaks cows for 2–3 minutes at 15 minute intervals.

► The holding pen is the hottest place on the farm! Consider reducing group size to reduce time spent in the holding pen along with ample fans to move hot air away from cows.

► Clean water. What's the water trough look like for your milking and dry cows? During the summer waterers should be cleaned at least every other day to prevent accumulation of algae and spoiled feed. Wiping the surfaces with a dilute bleach solution prevents algae growth for several days. Provide at least two waterers per group with a water supply of at least 5 gallons/minute. Consider adding more water trough space near the holding pen during the summer months.

► Ration modifications are needed to increase energy supply and decrease heat load on the cow.



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"Waiting until hot weather subsides is not an effective management plan..."



Upcoming Activities

See [VTDairy](#) for details.

July 10, 2015—Tentative Franklin Co. 1-day Grazing School at Ferrum College

July 17, 2015
VA Dairy Expo & VA Cattlemans' Field Day, Kentland Farm, Blacksburg

July 27, 2015
State 4H/FFA Dairy Youth Field Day

July 30, 2015
VA Colored Breed Show, Rockingham Fairgrounds

July 31, 2015
VA Sale of Stars, Rockingham Fairgrounds

August 1, 2015
VA Holstein Summer Show, Rockingham Fairgrounds

August 17-22, 2015
Rockingham County Fair

September 25, 2015
State Fair Jr. Dairymen's Contest

September 27-30, 2015
National 4-H Dairy Conf.

November 2015 & January 2016
Holistic Management & Risk Assessment Workshops for Dairy Farmers in the Southern Region (Workshops 1 & 2)

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.

For more information on Dairy Extension or to learn about current programs, visit us at [VTDairy](#)—Home of the Dairy Extension Program at: www.vtdairy.dasc.vt.edu.



R.E. James,
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Extension Dairy Scientist,
Dairy Nutrition

— Add supplemental fat. Whole oil seeds such as cottonseed and whole soybeans can be added to the ration to increase fat to up to 5% of the ration dry matter. Additional fat (up to a limit of 6-6.5% fat in the ration dry matter) should come from rumen inert fats which would not have an adverse impact on rumen fermentation.

— Don't overfeed protein. Many of the new

ration formulation programs will permit your nutritionist to balance rations based upon amino acid supply to the intestine. With the right combination of feed ingredients, ration crude protein can be reduced to 16% or less for high producing cows.

— Increase potassium, sodium and magnesium to 1.5%, .45% and .35% of the ration dry matter for lactating cows.

LITTLE DETAILS WITH BIG EFFECTS ON COOLING

—Beverly Cox, Former Dairy Extension Agent, Franklin County

Research from the University of Florida has shown 15-22% reductions in milk yield from summer heat stress as well as poor reproductive efficiency. Preventing or at least limiting the negative effects of summer heat on milk production, reproductive efficiency, and udder health requires sufficient cow cooling mechanisms.

Most cooling systems in Virginia include fans or a combination of fans and sprinklers. Installing these systems is a good first step, but proper maintenance and setting selection is necessary to achieve adequate heat abatement. Optimal fan performance requires routine cleaning of all fan parts and accessories. Wind speed generated by a fan should always be at least 5 mph directly underneath the next fan. Speeds less than this indicate inefficiencies in fan operation, possibly due to dirt buildup. Accumulation of as

little as 1/8" dirt on fan blades has been shown to reduce fan efficiency by 40 percent. Fans should be cleaned at least every 6 months, with greater frequency during the summer months when use is greatest. A vacuum cleaner or stiff-bristled nylon brush can be used for cleaning; a power washer can be used only if the fan motor is totally enclosed. Fan motors should also be lubricated annually to prolong fan life and maximize efficiency.

Thermostat and cycle settings are also critical to the effectiveness of any cooling system. Sprinkler and fan systems should be set to operate when temperatures reach 70-75 °F. Sprinkler cycles should run from 0.5 to 3 minutes using 0.03 gallons of water per square foot each cycle. Cycle length should be selected to soak the cow's back, but not allow water to reach the udder.

DON'T FORGET ABOUT YOUR DRY COWS

—John Currin, Extension Dairy Veterinarian; jcurrin@vt.edu

Most farms experience an increase in problems with fresh cows every summer. Increased number of dry cows is a major contributing factor to the situation. Due to the difficulty in getting cows pregnant during the summer, a disproportionate number will become pregnant from October through December, leading to a large number of cows in the dry lot from May through July. It is important to ensure that your facilities are set up to handle the number of dry cows you will have during the summer (especially feed bunk space).

Heat Stress is another factor. Dry cows suffer from heat stress too. Dry matter intake can be significantly reduced by heat stress. Many dairy farms have made little or no pro-

visions for heat abatement in their dry cows. Research has shown a direct correlation between negative energy balance pre-calving and likelihood of cows developing retained placenta and metritis post-calving. In addition to decreased dry matter intake, these heat stressed cows also expend a significant amount of energy to cool themselves. Remember to monitor dry cow nutrition.

Summer is a very busy time of year for dairy farmers and it is easy to forget about the dry cows. By spending more time managing dry cows now, you will be making a small investment in time that can pay huge dividends in the future by cutting down on the number of sick fresh cows and enabling cows to produce more milk for their lactation.