

## DAIRY PIPELINE

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### DON'T OVERLOOK EQUIPMENT MAINTENANCE

Keeping equipment ready and able requires advance planning, scheduling of check-ups and tune-ups, and routine maintenance. As costs continue to rise, it's tempting to forego these expenses to stretch a *few more hours* out of the old tractor, chopper, or baler.

As expensive as some of these maintenance costs are, repairs and the opportunity cost losses from breakdowns are far more expensive and stress producing. As margins narrow, "getting by" becomes "getting left behind." An example of 'spend now to save later' originates with my father. A tractor mechanic and shop foreman for over 25 years, dad taught me a great deal. An example is his advice on rake teeth. Conventional wisdom would suggest that as a rake loses teeth over time, one needs to replace them; however, the best strategy is to rebuild the rake with a full set of teeth, keeping the remaining teeth as replacements.

A colleague had a problem with his rake losing the same teeth at the same time and thought something was amiss with his rake. What he failed to recognize was that as he installed new teeth, they weren't evenly worn with the others. When the rake was lowered into working position, the new teeth struck the ground first and with the most stress, causing them to fail. By replacing all 100 teeth, his rake was running true and as it lost teeth in the future, he had a ready supply of semi-worn teeth for replacements.

A friend says that he "despises to change the oil" in his tractors and trucks, but frankly there is nothing that extends the life of these expensive pieces of equipment more. As diesel fuel (even low sulfur diesel) burns, it creates sulfuric acid that slips past your oil rings into the crankcase of the engine. Over time, this acidic build-up eats away at main bearings and seals, leading to costly and time-consuming repairs. Many people also don't realize that antifreeze will lose its punch over time and dirt and deposits in your coolant can act as mini-combustion chambers that pit metal causing sleeves to leak and fail.

Checking fluid levels and keeping engines as clean as possible can help save money; cleaner really does run better. An 1/8" layer of grease, dirt and grime cuts an engine's abil-

ity to cool itself in half so be sure to wash off spills and leaks to prevent further damage. [Ext. publ. 442-451](#) by Dr. Bobby Grisso and Robert Pitman summed up machinery maintenance in this way:

*"A Midwest study showed that many farmers could reduce machinery repair costs 25% by improving routine maintenance procedures. With a yard full of machinery, that savings can be significant. As an example, an \$80,000 tractor will typically require about \$24,000 in repair costs during 5,000 hours of operation when receiving average maintenance. This cost can be decreased to approximately \$18,000 with excellent service management. Timely preventative maintenance and inspection will not only help reduce major problems and downtime, it will also help identify problems when they can be corrected with relatively minor repairs."*

The most important equipment on a dairy farm is in the parlor. Dr. Clell Bagley, Extension Veterinarian with Utah State University had this to say about servicing dairy equipment:

*"The milking machine (milking system equipment) receives some of the hardest use of any equipment on the dairy farm and yet is often neglected for routine maintenance. Besides long hours of use each day the milking equipment is also exposed to water, milk and chemicals as well as multiple persons using it - all of which are severely detrimental to equipment. This equipment is critical for the proper harvest and storage of the dairy farm "crop" and will function best if provided routine maintenance."*

Rubberware deteriorates rapidly, but is often not changed as recommended. It "looks okay" to the dairyman, so it tends to be used longer. This is especially true with inflations because they look okay at the time of their expiration— and they should. But, pitting is beginning to occur. These microscopically small pits in the surface retain milk and bacteria which then begins to have a subtle effect on somatic cell count and mastitis levels. Soon the dairyman is paying an expensive price (mastitis) for the choice to use old inflations. The same principle applies to the rubber hoses which begin to crack and develop small holes. Pulsators should be checked for proper function. Some brands are designed to be washed out periodically. Also, "kits" should be used to replace...

"It is expensive to service and maintain equipment; however, the costs of not doing routine maintenance are far higher."



## Upcoming Activities

**May 4, 2013**

Dairy Club at Virginia Tech Invitational Youth Dairy Judging Contest, Blacksburg, VA

**May 20, 2013**

[Hokie Cow Classic](#)

**June 16-20, 2013**

Southeast Dairy Youth Retreat, Georgia

**July 24, 2013**

State 4-H/FFA Dairy Youth Field Day, Wed., Clarke and Frederick Counties

*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.*

“The ultimate measure of success of the heifer rearing program is how well heifers perform once they are in the milking herd.”

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



R.E. James,  
Dairy Extension Coordinator &  
Extension Dairy Scientist,

...the parts within the pulsator that wear with time and use.

Some dairy farms do much of the maintenance themselves while others find a service contract more economical. No matter the system, it is important that each dairy has a method so that routine maintenance is done in a timely manner to avoid problems and breakdowns. It is expensive

## HEIFER REARING GOALS

The overall goal of dairy heifer rearing is to economically raise heifers to be of adequate size and body condition and to calve at a reasonable age to produce high quantities of high quality milk during the first lactation. This goal takes many things into account including economics, growth, health, and production.

There was a time when age at first calving may have been overstressed at the expense of body size. Today, growth is emphasized with age being secondary. It is more desirable to have a well-grown heifer that calves slightly older than one that calves at 24 months but is undersized. An undersized heifer will likely struggle during the first lactation, will not compete well at the feed bunk in the milking herd, and will shift nutrients from production to growth.

Previously, growth standards were fairly rigid with specific weight goals stated for each breed. However, given that mature body size varies from herd to herd due to genetic selection goals, recommendations for bodyweight at first calving should be expected to vary similarly. Today's rule of thumb is to have heifers calve at approximately 82% of their mature bodyweight. In order to evaluate one's herd status, the dairy farmer needs to know the average weight of mature cows in the herd as well as bodyweights of heifers post-calving. For example, if a herd's average bodyweight for mature cows is 1,500 lbs., the goal bodyweight at first calving would be 1,230 lbs.

Good management is required in order to reach the overall heifer management goal. It includes a strong nutrition program that encompasses forage testing, ration balancing, pasture management and supplementation, and growth monitoring. Facilities need to be functional, not fancy. Providing animals with clean, dry, and well-ventilated facilities is important for good health and growth.

Herd health for heifers begins before

to service and maintain equipment; however, the costs of not doing routine maintenance are far higher. Weighing the investments already made against the replacement costs of the equipment on hand highlights that maintenance truly pays dividends in the long run.

—Andy Overbay,  
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birth by ensuring that dry cows are properly fed, are in good body condition, have been vaccinated, and calve in a desirable environment. Colostrum management should provide at least 2 quarts of high quality colostrum to the calf within the first two hours of birth followed by subsequent feedings at 12-hour intervals for the first 3 days of life. Providing good nutrition, minimizing stress, and developing a health protocol for heifers with the assistance of the herd's veterinarian are essentials for raising healthy heifers and achieving growth goals.

Monitoring age at first calving is still important. It is costly to delay calving, especially when feed prices are high. Many factors including growth and reproductive management influence age at first calving. One should be mindful when evaluating age at first calving because there is a 9-month lag between the management functions that resulted in conception and the time of calving. A timelier parameter to monitor is age at conception. PCDART has a database item (272) for age in days at conception. In order for a herd to reach a goal for age at first calving of 24 months, age at first pregnancy would need to be 15 months. Keeping track of age at first pregnancy for heifers diagnosed pregnant each month would allow the dairy manager to make timelier corrections to the nutrition and reproduction programs as needed. The Heifer Tracker in PCDART makes monitoring this database item fairly simple. Note that age at first breeding would likely need to be 13 months to achieve the age at first pregnancy goal to account for average conception rates.

The ultimate measure of success of the heifer rearing program is how well heifers perform once they are in the milking herd. Peak and summit milk, 305-day mature equivalent milk, and somatic cell counts in the first 40 days of milk can be useful parameters to track on a monthly basis.

—Dave Winston, Extension Dairy Scientist & Dairy Youth Program Coordinator,