Virginia Cooperative Extension

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DAIRY PIPELINE

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Department of Dairy Science
Blacksburg, VA 24061
540/231-4762 Fax: 540/231-5014
www.vtdairy.dasc.vt.edu

"Given the high price of corn and the excellent growing season we have had, small grain forages might be a more valuable asset than expected."

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How good is your small grain forage?

Small grain crops have been a popular risk management tool in many mid-Atlantic states as both a cover crop and a source of forage early in the growing season. The challenge with these crops is that their growth, yield and nutrient content are greatly influenced by weather. Timing of moisture and temperature after planting has a strong influence on early growth and development of a stand to overwinter successfully. Winter and spring moisture along with the onset of warm weather in the spring greatly influence the rate of growth of the crop and its nutrient content and yield. These conditions can mean the difference between boom and bust in terms of yields and nutrient content as shown below. In addition to moisture, stage of maturity at harvest has a large impact on energy and protein content. Small grains mature very rapidly under warm growing conditions. For optimum dry matter and energy yield, barley and triticale should be harvested at the "soft dough" stage of maturity when the seed heads have filled but are still soft. Cutting too early results in higher fiber, lower starch and less energy.

The table below shows two samples of barley silage harvested in 2009 and 2011. The 2009 sample shown was the result of poor growing conditions in the fall and spring. It also was harvested too early, before the seed heads had accumulated optimal amounts of starch. The 2011 crop was the result of adequate moisture and temperatures after planting which enabled establishment of a relatively good stand of small grains. Abundant rainfall of over 7 inches in March and April and relatively warm average temperatures of 56°F in April resulted in excellent barley growth and development. This forage was harvested at an optimal stage of maturity and wilted to the recommended level of dry matter.

What impact does small grain quality have on dairy rations? When corn prices exceed $8.00/bushel, dairy producers need to consider all measures possible to manage energy costs. Rations were formulated for a herd of Holsteins producing 85 lb. of milk with 3.8% fat using analysis for each of these forages as the basis of the rations with all other ingredients remaining the same. The 2011 barley silage resulted in a ration that used only a 1–2 lb. more barley silage dry matter and 3 lb. less ground corn to provide similar levels of NE and protein. With corn priced at $9.00/bushel, this resulted in a savings of $.48/cow per day in purchased feed cost. In addition to cost, the higher quality silage enabled greater quantities of forage to be included in the ration which should encourage higher fat test and better digestive health.

Given the high price of corn and the excellent growing season we have had, small grain forages might be a more valuable asset than expected. Develop a protocol for nutrient analysis, which includes representative sampling and testing on a frequent basis (at least monthly), to assure that the nutrient value of small grain silages are fully realized.

Harvest year	DM%	CP%	ADF%	NDF%	NE(Mcal/lb)
2009	29	10.2	35.3	55.2	.65
2011	32	8.8	24.6	42.8	.69

—Bob James,
Extension Dairy Scientist,
Dairy Nutrition
(540) 231-4770;
jamesre@vt.edu

Grazing Dairy Heifers Increases Profits

The dramatic rise in grain prices over the past six months has dairymen wondering how they can get the most bang for their buck. Producers are working closely with their nutritionists to maximize the use of home grown forages in rations to reduce ration costs. Over the past 20 years increasing numbers of dairymen have started to intensively graze pastures to maximize pasture as a source of feed.

Pasture lands are an underutilized and under managed resource on many farms in Virginia. Rotational grazing is a management intensive system that...

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Upcoming Activities

July 15—Southwest District Summer Dairy Meeting, 6:00 p.m., Slemp Creek Farms, Sugar Grove, VA. Contact Andy Overbay for details aoverbay@vt.edu or (276) 783-5175.

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.

"...grazing heifers provides producers the opportunity to reduce their operating costs in a simple user friendly management system."

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.

R. E. James

Bob James,
Dairy Extension Coordinator &
Extension Dairy Scientist,
Dairy Nutrition

...concentrates animals within a relatively small area (paddock) for a short period of time e.g. 12 hours - 4 days for dairy cattle. A pasture may be divided into multiple paddocks. The cattle are then moved to another paddock while the other paddocks are allowed to recover and grow. Animals are moved according to a flexible schedule based on number and weight of animals, the amount of land available, quality of forages in the paddock and forage consumption.[1] Continuous grazing is use of one pasture.

Stan Pace, Agronomic Crops Agent with the Mississippi State University Extension Service, explained that "Cows are selective grazers. When put in a selective forage situation, they'll overgraze some spots and undergraze others. Over time, you will have poor quality grass and less total forage production."[2]

Forage utilization efficiency is the percentage of forage grazed on a pasture. Pace declared, "Using rotational grazing can increase efficiency up to 75% over conventional grazing's 30—35% percent efficiency. He said moving the cattle every three or four days yields a 50—60% forage utilization efficiency. To increase efficiency to about 75%, I'd move them every day."[2] To make the best use of rationally grazed pastures and optimize animal growth rates, supplementation may be needed.

Due to a lack of rainfall in the summer months, many pastures may not grow enough forage to meet the animals' dry matter intake levels. Based on forage quality and quantity and desired rates of gain, many producers supplement the grazing heifers with silages, bypass protein, vitamins and minerals, etc. The goal is to achieve 1.75 lbs. rate of gain that is needed for dairy heifers to freshen at 24 months and weigh 1,250 lbs.[3] Soil fertility plays a major role in determining the quantities of forage produced on pasture.

A current soil test takes out the guesswork and prevents the producer from under or over-applying lime and fertilizer, either of which will decrease your efficiency and profitability. Virginia Tech soil test laboratory recommendations are based on research conducted for Virginia soils and climate.

The type of grazing system implemented on a farm has major implications regarding pasture fertility.

Missouri researchers estimated that grazing animals recycle 75-85% of forage nutrients consumed. An even distribution of manure throughout a paddock is required for productive plant and animal growth. Intensity of grazing rotations affects the manure coverage in paddocks. In a rotational grazing system there is an even distribution of manure because the animals are forced to consume forage in the paddock before being moved to another paddock. The Missouri researchers calculated that under continuous grazing practices, 27 years would be needed to obtain one manure pile per every square yard within a pasture. Conversely, the pasture was divided into paddocks and a two day rotation was used; then two years would be needed to achieve an even distribution of manure within the paddock.[4]

In times of surplus forage in a pasture, the hay can be baled and sold or stored for future use. Kentucky researchers have estimated that a ton of grass hay (fescue, orchard grass) removes 12 lbs. of phosphate and 50 lbs. of potash from the soil.[5] If these nutrients are not replaced soil reserves will be depleted over time. Consequently, there will be a reduction in crop yields. Soil testing determines the amount of fertilizer that needs to be applied to maintain hay yields.

Cooperative extension agents can assist producers in the design of grazing systems for their farms. Numerous grazers have stated that the greatest challenge in implementing a grazing program on their farm is taking the first step which is splitting a pasture in half using temporary fence. Once they see how easy it is to move the cattle from one paddock to another, they never look back. How many times on a dairy farm do the dairy cattle harvest their forage and distribute their manure for free? In an era of high grain, fuel and fertilizer prices, grazing heifers provides producers the opportunity to reduce their operating costs in a simple user friendly management system.

—Peter Callan, Extension Agent
Farm Business Management, Culpeper County
(540) 727-3435; Peter.Callan@vt.edu

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