

Dairy Pipeline

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Nutrition and Fertility

Cool weather usually brings about a push to get cows bred. Don't make the mistake of focusing heat detection. AI techniques. only on synchronization, and all other components of the reproductive program if you are not achieving the success you desire. Nutrition can also influence fertility at all stages with the most critical stages being the transition period and early lactation. Unbalanced rations fed in the transition group and early lactation even for a short amount of time can cause problems that may last way into lactation. Inadequate levels of energy in early lactation can slow the resumption of reproductive cycles, increase the time to first estrus, and reduce conception rates. Deficiencies in vitamin E and selenium can affect the immunity status and fertility can be reduced by an increase in retained placentas, metritis, and mastitis. And the effects of mineral imbalances on hypocalcemia are well documented. Excessive nutrients can also reduce reproductive performance, such as excessive protein in the diets of pre-fresh and early lactation cows.

Feed changes that typically occur during this time of year can cause real problems particularly for those groups of cows. Changes that may seem insignificant to you have the potential to effect not only production but reproduction. Remember to make those changes slowly, sample quickly, and adjust rations accordingly. Not doing this could also lead to ketosis. hypocalcemia, displaced abomasums, etc in early lactation, all of which are associated with a decrease in reproductive efficiency. Studies also show that these metabolic disorders can lead to more problems. A cow with hypocalcemia has been shown to be six times more likely to develop a retained placenta and three times more likely to develop metritis. The more nutritional imbalances the cow has during this time the more likely she is to be a problem breeder.

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Evaluate your forage inventory now!

Virginia Cooperative Extension

Knowledge for the CommonWealth

By now all forages have been harvested and it's time to evaluate the inventory. In this part of the country, the primary forage is corn silage with smaller amounts of alfalfa hay or haylage, small grain silages and grass hay. *Most dairy producers rely on previous experience in planning what to do next year. This approach can result in some real surprises if there are big changes in forage quality and quantity.* Several examples come to mind...

This year we had erratic rainfall with large effects on corn growth depending on stage of maturity when rains came. One producer harvested some excellent quality corn silage, with perfect dry matter (32%), low fiber (22% ADF) and high energy. However, yields were lower than previous years. Last year the yields were higher, but quality was lower (38% DM, 29% ADF). Last year's ration called for 55 lb. of corn silage and a substantial amount of corn grain. This year's ration called for 20 lb. more corn silage and less supplemental corn grain. This was a healthier ration with more forage dry matter and lower cost too! However, the new ration would require 450 more tons of corn silage for his 150 cow herd! This feeding program would exhaust silage inventory 80 days sooner than last year.

It was one of those years when nothing worked well for another producer. Small grain silage harvest occurred during extended wet weather. Barley silage had 22% dry matter and an undesirable smell. The largest cutting of haylage was too dry, 73% dry matter. It was very dark and smelled like caramel. Corn silage dried down fast and was ready to harvest two weeks before the custom harvester arrived. With these feeds, intake was depressed so milk production dropped considerably.

What should a dairy manager do? The poorest response is to do what was done last year and expect the same result.

1. Estimate the amount of each forage in inventory. Allocate it to where it is most needed. Highest quality goes to the milking herd and calves.

Animal numbers and the days that feed must last determine the maximum amount fed per day. Include losses due to spoilage which can range from 5% to 25%.

2. Evaluate quality by sending representative samples to a recognized forage testing laboratory. Get a more detailed analysis of the forages which are a major constituent of your feeding program. This might include CPM analysis for an in depth description of the carbohydrate and protein fractions, minerals and microminerals. А fermentation analysis of silages can reveal problems with palatability if butyric acid is too high. In vitro NDF digestibility tests can provide a better estimated energy value of corn silage. These tests will enable nutritionists to supplement forages to make up for deficiencies. When forage quality is high, the tests can result in significant savings in feed costs. Many dairy producers are reluctant to spend \$100 to \$200 on these comprehensive analyses. However, improved knowledge of forage quality can result in significant savings in feed cost and/or improved milk yield.

In the former example, the dairy producer projected forage needs and located additional silage early in the year when price was more reasonable. In the second example a fermentation analysis revealed large amounts of butyric acid in the silage which can predispose fresh cows to ketosis. This forage was removed from the milking cow ration and used for older heifers. The protein levels in the alfalfa haylage were heavily discounted for heat damage and used sparingly in the milking herd ration. Finally, a test of the corn silage revealed heavy mycotoxin contamination and low NDF digestibility. A mycotoxin binder was added to the ration and brewer's grains were used to add some more digestible fiber and improve palatability of the Production increased moderately, but it ration. became apparent that the existing

forages were of insufficient quality to support high milk yield. Knowing not to expect high milk production, the producer could make more realistic forecasts of farm income in the coming year.

Evaluate forage inventory and invest in tests of forage quality for effective planning of the feeding program in the coming year.

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Early Pregnancy Diagnosis

Pregnancy diagnosis is an important part of the reproductive program on most dairies. Finding open cows is the most important aspect of pregnancy diagnosis. Cows that are pregnant do not need further reproductive attention. It is the open cow that needs semen as soon as possible. Many veterinarians are starting to employ ultrasound in an effort to detect pregnancy at earlier dates than are possible by rectal palpation. Pregnancies as early as 25-30 days can be detected by ultrasound. The earliest time that pregnancy can be detected depends on a variety of factors such as ambient light and operator experience. If there is bright sunlight where ultrasound is being performed it can make detection of very early pregnancy more The primary advantage to early difficult. pregnancy diagnosis is the ability to find open cows quicker and get those cows enrolled back into the current farm system for getting semen into *cows*. The poorer the heat detection is on the farm the more important it is to consider early pregnancy diagnosis. The time interval between herd health visits also affects the advantages of early pregnancy diagnosis.

For example:

If your current cut-off for palpation is 35 days bred and a cow in your herd is 34 days bred (but open) when the veterinarian visits and the veterinarian comes every 4 weeks that cow will be 62 days bred when the veterinarian discovers that she is open at the next visit. If heat detection is a challenge on your farm as it is on many Virginia farms there is a good chance you may not find this cow in heat and therefore she will not have had another opportunity to get inseminated and become pregnant.

One important consideration in early pregnancy diagnosis is the increased likelihood of cows losing early pregnancies (See figure 1). The higher percentage of pregnancy loss is not a reflection of the abilities of the veterinarian doing pregnancy diagnosis or an indication of infectious disease but rather of natural death loss. Some farmers reconfirm pregnancies in cows already diagnosed pregnant. If you choose to use early pregnancy detection it is very important to recheck pregnancies particularly in those cows less than 40 days bred at pregnancy diagnosis. It is important for producers to understand that a higher percentage of cows will return to heat after being diagnosed pregnant than when pregnancy was diagnosed further along in the pregnancy.

Traditional pregnancy determination methods have served producers well for many years and continue to do so today. Early pregnancy diagnosis by ultrasound is another tool you may want to discuss with your veterinarian to see if it is right for your farm. Hopefully this article will give you insight into the advantages and limitations to early pregnancy diagnosis to discuss with your veterinarian.



Figure 1. Pregnancy losses from 28 days post AI to calving in lactating dairy cows. Pregnancy status was diagnosed using ultrasound at 28, 42, 56, 70, and 98 days post AI, and calving data were recorded at parturition. The conception rate at 28 days was 32%. Data adapted from Vasconcelos et al., 1

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Upcoming Activities

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Area Dairy Conferences: Rocky Mount December 6 Waidsboro Ruritan Club Registration Contact: Sue Puffenbarger (540) 483-5161 or smp@vt.edu
Blackstone
Marion Farm Bureau December 12 Registration Contact: Andy Overbay (276) 223-6040 or <u>aoverbay@vt.edu</u>
Brandy Station Fire Hall December 15 Registration Contact: Alan Grove (540) 564-3080 <i>or</i> <u>agrove@vt.edu</u>
Ever's Restaurant December 16 Harrisonburg Registration Contacts: Tina Horn (540) 245-5750 or <u>tihorn@vt.edu</u> or Alan Grove (540) 564-3080 or <u>agrove@vt.edu</u>

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.

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