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DAIRY PIPELINE

Synchronization programs for lactating cows should achieve a 30 to 35% pregnancy rate on all cows with first breeding between 65 and 80 days in milk. Programs for synchronization of estrus or ovulation with timed AI eliminating visual observation are available. Pharmacological control of the cow's estrous cycle to improve reproductive efficiency is possible and practiced by many dairy producers. Methods were originally devised to decrease the time spent detecting estrus; but systematic breeding programs are also available to completely eliminate heat detection allowing all inseminations to be on a specific day of the week. However, very few Virginia dairy farms have adopted a breeding program that provides an organized approach for administering AI at first service. Synchronization programs allow for the scheduling of the entire breeding herd rather than individual cows. Many options exist for the actual timing of injections of synchronizing hormones. Hormones used in synchronization programs for lactating cows fall into three general compound categories: 1) prostaglandins (an example is Lutalyse), 2) estrogen (such as ECP), and 3) a releasing hormone (example is Cystorelin). Most of these hormones are the same as the naturally occurring compound that is circulating in the cow's blood. Most synchronization programs use a combination of these different classes of hormones to either cause the synchronization of the expression of estrus, ovulation, or release of the egg (usually without the expression of standing estrus). Rather than taking a reactive approach, waiting to identify cows in heat, the synchronization program induces either the express of estrus or ovulation and may allow for appointment breeding without the need for heat detection. The real advantage of these programs is the reduction in days to first breeding. Currently the national average for days to 1st service and average for DHI herds in Virginia is approximately 100 which can easily be reduced by 25 days with the implementation of a synchronization program. For the success of any program the timing of hormone injections and insemination should not vary from the protocol established with your veterinarian or consultant. After fifty cows have been inseminated an initial estimate of success can be evaluated and the program modified if needed. Synchronization programs for lactating cows are available and real economical advantages do exist for most herds to implement a program for all cows not just problem cows.

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Taildocking has become a commonly accepted practice on many dairy farms in North America. However, this practice has generally been accepted as being beneficial without significant scientific scrutiny of its effectiveness. A study recently published in the *Journal of Dairy Science* (October 2002) examined the effect of taildocking on the cleanliness of legs and udders of dairy cows, as well as the impact on somatic cell counts and intramammary (primarily subclinical) infections. This study compared 625 docked cows with 625 undocked herdmates in 8 Wisconsin dairy herds over an 8 month period. The researchers could find no significant differences in cow cleanliness, somatic cell count or infection rate which could be attributed to the docking of the tails. (Although it would have been valuable information, they were not able to compare the rates of clinical mastitis between the two groups of cows because of unreliable records!) This study agrees with a few previous studies which have not been able to demonstrate a significant beneficial effect of tail-docking. Besides the general lack of scientific evidence supporting the practice, there are other factors that may impact a producer's decision about whether or not to dock tails. A report has recently been released by the Food Marketing Institute and the National Council of Chain Restaurants, who have established a scientific advisory panel to help them "*improve the care and handling of animals used for food*" (**JUNE 2002 REPORT - FMI-NCCR Animal Welfare Program**, which can be found at http://www.fmi.org/). Under the guidelines for dairy cattle, the report "*recommend[s] that switch trimming be used rather than taildocking.*" While this is only a suggested guideline at this time, it seems likely that this could be

one of the standards that the retail community (and public) will require producers to meet in the future. If you are currently docking the tails of your cattle, or considering this practice, it may be beneficial to discuss with your staff, your veterinarian and other advisors the benefits and costs associated with this practice. For some producers, the real (and perceived) benefits may continue to outweigh the costs. However, it is also possible that you will decide, in the light of the above evidence, that this practice is not beneficial enough to warrant continuing.

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Milk urea nitrogen update. Milk urea nitrogen testing has now been around for several years and most DHI labs will offer an analysis (United DHI will conduct this measurement). Pennsylvania DHI reports results on a web site (http://130.91.88.59/mun/mun.html) maintained by the University of Pennsylvania's Center for Animal Health and Productivity. Summaries of all cows that have been tested since September 1995 are included. They find that first lactation cows averaged 12.9 mg/dl plus or minus a standard deviation of 3.8. The standard deviation gives the range for 2/3's of the cows tested. In other words 1/3 fall outside this range (9.1 to 16.7 for first lactation cows). Second lactation cows averaged 13.2 plus or minus 4.0 (9.2 to 17.2) and third and later lactation cows averaged 13.1 plus or minus 4.1 (9.0 to 17.2). Urea is a small molecule that travels dissolved in water. In other words urea will be in blood, urine, and milk at approximately the same concentrations. Urea is a product of protein degradation and does reflect the protein status of the animal. Over or under feeding can result in high or low levels of MUN, respectively. Also high levels of rumen degradable protein can result in elevated MUN. Energy intake also can have an impact. If there is not enough energy present in the rumen to utilize all the nitrogen that is available some will pass into the blood and be transformed into urea in the liver. Jersey's have between 1 to 2 mg/dl more MUN than Holsteins. Typically expect herd average MUN's to range between 10 to 14. Individual cows will be outside of this range and factors such as feed and water intake, time of eating relative to sampling, and level of production will all have an influence. If herd average MUN's are elevated or depressed outside of this range, check total protein intake, rumen degradable protein intake, and ruminally available energy. MUN concentrations do give an indication of how efficiently protein or nitrogen is utilization and can be used to fine tune the feeding program and detect ration changes.

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**** Upcoming Activities****

Fall Dairy Conferences	(2002)	
	Marion	Dec. 11
	Rocky Mount	Dec. 12
	Farmville	Dec. 17
	Culpeper	Dec. 18
	Dayton	Dec. 19
Feed and Nutritional Management Cow College, *Donaldson Brown Hotel*, Blacksburg		Jan 9 & 10 (2003)
Virginia State Dairyman's Association Convention, *Holiday Inn*, Staunton		Jan. 22

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