

Dairy Pipeline

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Department of Dairy Science

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Get those cows bred before summer heat becomes a challenge

Pregnancy rates in Virginia dairy herds drop significantly once summer heat stress arrives. *It is important to get cows pregnant before summer heat makes them more difficult to breed and now is the ideal time to work on ensuring as many pregnant cows as possible.* With timed AI programs like OvSynch and CoSynch, it is possible to get semen in cows without relying on heat detection. There is no reason open cows should not get at least two breedings before summer. If you are having trouble catching cows in heat, consider enrolling all cows that are open at herd check into a timed AI protocol (OvSynch or CoSynch.) For years we have given cows that are open at herd check and have a CL a dose of prostaglandin and then watched for heats. On most farms only 40-60% of those cows would be found in heat and bred in the next 7 days. By putting these cows on a timed AI program, you can ensure that 100% of cows will get semen in them within 10 days. Timed AI programs are not the complete answer to getting cows pregnant on all farms. Timed AI programs work best in herds where the heat detection is the limiting factor for reproduction.

On many farms heat detection becomes a challenge when spring crop work keeps people busy and away from the cows. What timed AI programs do provide is the opportunity to ensure that cows are not culled due to an insufficient number of breedings. Even if you are not currently using a timed AI protocol, you should consult your veterinarian to see if doing so will help you get semen in more cows before summer heat arrives.

--John F. Currin

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Agricultural Technology Program Accepting 20th Class

The two-year Agricultural Technology Program (AT) is accepting its 20th class of students this fall, yet it is still one of the best kept secrets at Virginia Tech. It has gained a positive reputation among potential employers and industry but many students, teachers, and guidance counselors still do not know the program exists.

AT continues to offer a hands-on approach to course work that is attractive to many students who might not otherwise continue their education. All courses are tied to career interests, relieving students of the first

two years of liberal arts education required at most universities. A second year Dairy Management course is offered for those students interested in gaining more hands-on, science based knowledge specifically related to the dairy industry. AT currently has 113 students and five full-time faculty, resulting in an attractive faculty/student ratio and a close-knit community.

AT students enjoy all the same benefits of 4-year Virginia Tech students with the exception of participating in NCAA Sports and the ROTC program. There are numerous agricultural clubs and fraternities for students to join including the Collegiate Young Farmer Chapter affiliated with the Virginia Farm Bureau Young Farmers.

The AT Program is still accepting applications for fall 2006. AT handles its own admissions and does not utilize the university's on-line system. The application deadline is July 1, 2006. Admissions requirements include a standard or advanced diploma and a required 2.0 GPA on a 4.0 scale. Preference is given to those students with at least a 2.5 GPA. SAT test scores are not required, but applicants must take a placement test identical to that of the Virginia Community College system. Students can take the test on campus or at a participating community college in their area after their initial application has been processed. Students must also interview with an AT faculty member. Interested students should visit the program's website at www.agtech.vt.edu to download an application.

We are proud to be celebrating our 20th anniversary in August of 2007! Prospective students and their parents are invited to participate in an AT Open House on campus April 1st and AT Dinner Meetings across the state in May. Please see www.agtech.vt.edu for more information! Come learn more about one of the best kept secrets at Virginia Tech—we hope to see you there!

--Rachel Hensley

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Precision Feeding Project

A large Precision Feeding Project is underway in the state of Virginia. *The goal of the project is to monitor phosphorus intake relative to the requirements for 300 dairies in the state over 3 years and to conduct more intensive work on phosphorus and nitrogen balance on 10 herds.* All 806 Virginia permitted dairies were contacted using a survey. Of those, 521 returned completed surveys with 341 indicating they would

potentially be interested in participating in the project. A partial summary of the current survey data is included in the following table:

Milk Yield, Cow/Day	Average		Maximum	Minimum
	60		94	18
	Increase	Decrease	No Change	Discontinue
# Cows	39%	2%	53%	5%
# Acres	17%	6%	76%	1%
Years Mgmt.	0-5	6-10	10-20	21+
Experience	11%	12%	19%	58%

In December, Charlie Stallings, Bob James, Mark Hanigan, Beverly Cox, Tina Horn, and Kevin Craun started visiting dairies. For now, Augusta, Rockbridge, Rockingham, Shenandoah, Fauquier, Clarke, Culpeper and surrounding areas are keeping the group busy. So far 132 farms have been contacted, with 115 having agreed to participate in the project. The remainder will be contacted across the next six months. Currently, participation encompasses 23 counties and one city. We will continue signing up herds in these general areas—concentrating on the Chesapeake Bay watershed—until early summer. At that point, we will begin to focus on dairies in other parts of the state.

We feel this project represents an excellent opportunity to document current phosphorus feeding levels and provides an incentive to reduce those levels where appropriate. We sincerely appreciate the efforts of those participating in the project.

--Mark Hanigan
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What is the energy content of this ration?
Samples evaluated at the forage testing lab tell us the amount of Net Energy (NE) per pound of dry matter. The numbers are important enough that they may be the first item we look at when the nutritionist sends us a new ration. However, *estimating* the useful or Net Energy (energy which can be used for maintenance, milk production and growth) is not a very precise process. Gross energy content of the feed is measured by burning a sample and recording the energy released. We must account for the inefficiencies of the cow by deducting energy lost in feces and urine or expelled as methane and other gases. Cows also produce heat in the process of digestion. The only way to account for these losses is to place the cow in a large glass box, hook up a gas mask, collect and evaluate all manure and urine and record the heat produced. Be assured that forage testing labs in the U.S. do not determine energy using this method! *So how is energy determined?* NE is *estimated* from a large

body of research on energy values of various ration components. For instance, feeds containing lots of fat and starch provide more energy than feeds containing larger proportions of fiber, ash, or minerals. NE values represent the amount of energy we expect the cow to derive from a feed at a given level of intake. Just to make things more interesting, higher intakes reduce energy extraction (via rapid passage through the digestive system) and vice versa. Remember the following when evaluating energy values of a feed.

1. NE value of a feed is an estimate of useful energy content of feed.
2. NE values are not absolute like other nutrients such as minerals, vitamins, or protein.
3. Higher intake means less net energy available per lb. of feed intake.
4. There is no standard method of estimating NE used by all laboratories across the U.S.

Keep the limitations of estimating NE in mind in ration evaluation. Use all the nutritional information available, including protein, fiber, minerals and vitamins to create rations that promote a healthy rumen, high intake and high milk production.

--Robert E. James
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Upcoming Activities

Innovative Nutrient Solution Expo & State Dairy Conservation Field Day April 5
Cub Run Farm, Rockingham County
For more information, visit www.vtdairy.dasc.vt.edu or contact Charlie Stallings at (540) 231-3066; cstallin@vt.edu

Little All-American Dairy Show April 8
Virginia Tech-For more information, contact Dave Winston at (540) 231-5693; dwinston@vt.edu

Dairy Club Invitational Youth Dairy Judging Contest April 29
Virginia Tech-For more information, contact Dave Winston at (540) 231-5693; dwinston@vt.edu

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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