Important Mailing List Update - Please Read

We are updating our mailing list and starting in 2016, we will reduce the distribution of printed copies of the Delaware Dairy Newsletters. Some current recipients of the newsletter will need to respond (see below) if you wish to continue receiving the newsletter.

Producers who are currently milking cows or in a related venture will automatically continue to receive a printed copy by mail. No response is required.

Vendors who have supported the dairy program in the past may elect to receive a hardcopy or email containing a pdf version of the newsletter, Please let us know your preferred method of delivery.

For all others, we ask that you contact us and choose between receiving a printed or electronic version. If you do not contact us with a choice, we will assume that you no longer wish to receive the Delaware Dairy Newsletter.

Contact Dan Severson at 302-831-8860 or severson@udel.edu. Thank you for your understanding.

Delmarva Dairy Day at Hartly Fire Hall

Hartly Fire Hall - Hartly, Delaware - Thursday February 18, 2016 - 9:30 am- 2:15 pm.

Agenda - The University of Delaware Cooperative Extension will give an update on the Veterinary Feed Directive. Dr. Jim Ferguson from the University of Pennsylvania will be presenting Ovarian Dysfunction as a cause of Reproductive Inefficiency. Dr. Tom Bass, from Renaissance Nutrition will cover the Latest in Dry Cow/Transition Cow Management. A hot lunch will be served by the Ladies Auxiliary along with UD Creamery ice cream. After lunch, Dr. Jim Ferguson will address Chromium and its Impact on Fertility. Dr. Andy Holloway of Elanco will present an update on Heat Stress in Dairy Cattle. Rounding out the program will be Dr. Tom Bass will speak about Culling Strategies.

Participants will have the opportunity to visit with dairy industry vendors throughout the day and the University of Delaware will be offering ice cream manufactured at the UDairy Creamery on campus from milk produced by the UD dairy herd located in Newark.
Program registration is free and open to any producer or industry professional on the eastern shore, however attendees are asked to RSVP to Dan Severson, at (302) 831-2506 or severson@udel.edu by February 16th so that they can be included in the count for setup and lunches. If you have any special needs in accessing this program, please notify Dan two weeks in advance so that your needs can be accommodated.

What Caused that “Hic – Up”?

Limin Kung, Jr.
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It is not uncommon for a dairy herd to have a “hic-up” that results in an unexpected drop in dry matter intake and/or milk production. (I’m excluding metabolic issues like ketosis, milk fever or displaced abomasums). Some of the “hic-ups” can be explained rather easily; for example, a sudden change in weather taking the heat index above 90 F. In other instances it may take a little bit of detective work to identify the probable cause. Here are few suggestions on what and where to look for and what might have caused an unexpected drop in intake and/or milk.

- Weather related issues
  - Extreme cold resulting in frozen waters, slippery flooring due to freezing
  - Extreme heat/humidity resulting in heat-stress

- Feeding issues
  - Feeding spoiling silages and TMR
  - Abrupt feed changes (e.g. switch from old to new silage, switch in silos, a switch from well processed to poorly processed corn silage, a switch from low to high concentrates)
  - Feed component changes that might result in a different taste or smell
  - Switching forages or silages with a large difference in nutrient composition or quality without making appropriate adjustments to the TMR
  - Switching silages with large differences in DM content and not making appropriate adjustments to the TMR
  - Insults from various feed sources – e.g. mycotoxins, salmonella, botulism, ingestion of noxious weeds, nitrates
  - Ingredient error in concentrate formulation (e.g. excessive urea, monensin, salt)

- Operator error when mixing TMR ingredients (e.g. overly mixed TMR)

- Defective weigh cells on mixing wagons

- Changes in water quality or access to water

- Response to overly aggressive hoof trimming

- Stray voltage
Antimicrobial drugs have been added to livestock feed to enhance growth and feed efficiency for years. However, the Food and Drug Administration is limiting the use of antimicrobial medications in food-producing animals to “judicious use” under the supervision of a veterinarian and new guidelines for how these drugs are to be used has been mandated under the Veterinary Feed Directive (VFD).

The plan is to eliminate all animal production uses of “medically important drugs” – antimicrobial drugs that are important for therapeutic use in humans – in the use of feed by the end of 2016. The reason for this is that the use of antimicrobials, in both humans and animals, contributes to the development of antimicrobial-resistant bacteria.

A VFD drug is a drug intended for use in or on feed and is limited to use under the supervision of a veterinarian that is licensed to operate in the state in which the animals are being treated. However, it is my understanding that if the drug is not used in or on feed, is an injectable antibiotic and is a non-prescription drug, it will still be available over-the-counter. A cattle drug that currently requires a VFD is Tilmicosin. Examples of cattle drugs that will change from over-the-counter sales to use only by the VFD are Neomycin, Tylosin, Virginiamycin, Chlortetracycline and Oxytetracycline. For instance, if you feed milk replacer that contains Neomycin, you will need a VFD from a veterinarian once the VFD goes into effect.

A VFD is a written statement, issued by a licensed veterinarian that authorizes the owner or caretaker of the animals to obtain and use animal feed containing a VFD drug or a combination VFD drug to treat the animals in accordance of the approved drug label. “Extra-label use” of medicated feed containing a VFD drug is not permitted. The VFD feed must be used in accordance to the information specified on the label and on the VFD. The VFD also contains an expiration date and duration of use that must be followed. The expiration date sets the period of time for which the producer can obtain the feed and complete the feeding cycle of the VFD feed and the duration of use determines the length of time the VFD feed can be used. For example, if you have a VFD drug with a duration use of 30 days and an expiration of 60 days, it means you have 60 days to obtain the VFD feed and complete the 30 day feeding cycle.

To obtain a VFD feed, a producer must obtain a VFD order from their veterinarian. You will then need to take or send the order to your feed manufacturer or supplier to purchase the VFD feed. The use of a VFD feed requires the professional supervision of a licensed veterinarian and is based on the veterinarian-client-patient relationship (VCPR). According to the FDA, the VFD order form is currently being modified. Some pertinent information that will be required is as follows:

- Veterinarian’s name, address, and telephone number
- Client’s name, address, and telephone number
- Premises where the animals are located
- Date of VFD issuance
- Expiration date
- Name of VFD drugs
- Species and production class of animals
- Approximate number of animals to be fed
- Indication for which the VFD is issued
- Level of VFD drug and duration of use
- Withdrawal time, special instructions and cautionary statements
- Number of reorder, if permitted
- Statement “Use of feed containing this veterinary feed directive (VFD) drug in a manner other than as directed on the labeling (extra-label use), is not permitted”
- An affirmation of intent for combination VFD drugs as described in 21 CFR 558.6(b) (6); and veterinarian’s electronic or written signature.
As a producer, you are responsible for only feeding a VFD feed to animals based on the VFD issued by a licensed veterinarian. You may not feed a VFD feed to animals after the expiration date. You must provide a copy of the VFD order to the feed distributor. You must maintain a copy of the VFD order for a minimum of two years and you must provide the orders if requested by the FDA.

If you would like more information, feel free to contact Dan Severson at severson@ude.edu or call 302-831-8860. From the U.S. Food and Drug Administration.

Time Budget Economics

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Introduction: Dairy Cow Time Budgets

The 24-h time budget (Figure 1) represents the net behavioral response of a cow to her social and physical environment (Grant, 2004). Deviations from benchmarked behavioral routines reflect departures from natural behavior and serve as a basis for estimating dry matter intake, performance, health and economic losses due to inadequate management strategies.

- 5.0 h/d eating
- 12-14 h/d lying (resting)
- 2.0-3.0 h/d standing, walking, grooming, agonistic, idling
- 0.5 h/d drinking
- **20.5 to 21.5 h/d total needed**
- **2.5 to 3.5 h “milking” = 24 h/d**

**Figure 1.** Daily time budget for lactating Holstein cow in free-stall housing.

Dairy cows at approximately 100% stocking density in free-stall housing spend 3 to 5 hours per day feeding, consuming 9 to 14 meals per day. In addition, they ruminate 7 to 10 hours per day, spend approximately 30 minutes per day drinking, 2 to 3 hours per day outside the pen for milking and other management practices, and require approximately 10 to 12 hours per day of lying time (Grant and Albright, 2001; von Keyserlingk et al., 2012). There are three important management considerations regarding time budgets:

- Approximately 70% of the cow’s day is spent eating and/or resting, so we cannot afford to get it wrong.
- There are only 24 hours in a day.
- Consequently, the cow only has, on average, 2.5 to 3.5 hours per day to spend outside the pen and away from feed, water and stalls.

If we force the cow to spend more than about 3.5 hours per day outside the pen, then she will need to give up something – typically feeding and/or resting. *Every farmer should know how long their cows spend outside the pen in a free-stall barn.*
Importance of Minimizing Time Outside of the Pen

In fact, when cows are away from their pen for more than 3.7 hours per day, farms are unable to reach the recommended herd median lying time of 12 hours per day (Charlton et al., 2014). These researchers found that providing one stall per cow and minimizing time away from the pen were critical for the cow to attain her recommended lying time.

Recently, Gomez and Cook (2010) have shown how time outside the pen during milking and lameness interact to affect the cow’s daily time budget. For example, lameness score 3 cows (1 to 3 scale) with a mattress stall base may only be outside the pen for approximately 0.5 to 1.5 hours per day and still meet their requirement for 11 to 12 hours per day resting. In contrast, lameness score 1 (healthy) cows can stay outside the pen from 2 to 4+ hours per day and meet their resting requirement. At some point, it becomes impossible to meet time budgeting requirements with lame cows. If they can only be outside the pen for 0.5 hour per day, for instance, then realistically there is not even enough time for milking twice daily.

Common ways to disturb time budgets on-farm include:

- excessive time outside the pen
- mixing primi- and multiparous cows
- overcrowding and resulting excessive competition
- greater than 1 hour per day in headlocks, especially fresh cows
- short pen stays during transition period – i.e. “social turmoil”
- inadequate exercise
- uncomfortable stalls
- inadequate feed availability
And the list could continue further…

Time Budgets and Cow Responses

Time budgeting as a concept is easy to grasp. But, farmers often ask if time away from the pen really matters to the cow in any measurable way? In an on-farm case study, Matzke (2003) observed the effect of 3 versus 6 hours per day outside the pen. Pen size was adjusted versus parlor capacity to manipulate time outside the pen for milking. Mixed primi- and multiparous cows (30:70 ratio) at 100% stocking density of stalls and feed bunk were observed for 14-day periods. As much as possible, factors other than time outside the pen were kept constant. Cows gained over 2 hours per day of rest and nearly 5 pounds per day of milk when they were outside the pen for only 3 versus 6 hours per day. Incredibly, first-calf heifers gained 4 hours per day of rest and 8 pounds per day more milk. So, there appear to be short-term effects of time budgeting on milk yield that are associated with changes in resting activity.

Failure to meet time budget needs may also affect longer term health status of the cow, such as lameness. In fact, the long-term economic consequences of poor time budgeting may outweigh any shorter-term changes in milk yield. Espejo and Endres (2007) found that prevalence of lameness in 53 high-producing pens on 50 dairy farms was most highly associated with greater time outside the pen.

Recent on-farm data collected for high-producing cows from 40 herds in the northeastern US and 39 herds in the western US indicate an average time outside the pen of 4.8 hours per day for the northeastern US and 3.9 hours per day for the western US herds (von Keyserlingk et al., 2012). Across the two regions, time outside the pen ranged from 2.3 to 7.7 hours per day – so clearly there is room for herds to improve!
**Time Budget Economics**

Minimizing time outside the pen is the key to optimal time budgeting. On average, cows should not be outside the pen for more than 3.5 hours per day. Meeting this time budget requirement for resting should result in greater milk yield (5 to 8 pounds per day more) and a lower incidence of lameness in the herd.

**References**


