

# Newsletter from Dr. Whitmore

The latest information of the dairy production medicine in USA



## January, 2012

We Must Feed Calves More Milk And Calf Starter in Cold Weather .....	1
Footbath Management Tips During Cold Weather..	4
How Can We Prevent Hypocalcemia? .....	6
Dairy Notes.....	8
The National Dairy Farm Program .....	8
National Dairy Center for Veterinary Students .....	9

## ***WE MUST FEED CALVES MORE MILK AND CALF STARTER IN COLD WEATHER***

We all know that the thermal neutral zone for calves ranges from 60 degrees to 75 degrees F. We know that baby calves only have enough reserve body fat to keep it warm for one day.

There is a good article in Hoard's Dairyman (Nov. 2011, page 717) that reviews recent research on the affect of cold weather on calves. Research revealed that calves will lose about 0.2 pound of daily gain for each 10 degree F. drop in temperature below 60 degrees F. Dairy-men usually feed milk replacer according to the manufactures label directions. When the temperature drops to 10 degrees F., a 100 pound calf will stop gaining weight. It is important that we discuss the importance of calf weight gain during cold weather with our clients. This is very easy for busy dairymen to miss this weight loss in their calves.

The most common recommendation is to feed 33% to 50% more milk replacer during cold weather. The author of the Hoard's Dairyman article stated that this approach over feeds protein because the protein requirement does not go up much during cold weather.

A new approach is to feed a fat supplement in liquid feed. Several

companies now produce a fat supplement that contains 60% fat and 7% protein. This could be thought of as an economical cold weather pack for calves. This product provides the extra energy needed for cold weather and does not over feed expensive protein.

Older calves need more calf starter during cold weather. This is easy to say but difficult to accomplish. Calves require four pounds of water for each pound of calf starter. We must feed calves warm water two or three times per day during the winter. Do any of your clients do this? Research reveals that 46 degree F. water reduced the rumen content temperature of calves 20 degrees F. If the water was 66 degrees F., there was little or no reduction in rumen temperature.

New research, based on 10 years of records from calves raised in cold weather, revealed that all calves had reduced weight gains. This resulted in over 2,000 pounds lower milk production during their first three lactations. Calves born in winter months consumed less energy than calves born in warmer months.

Conclusions from this article are:

- 1) Calves lose 0.2 pound daily gain for each 10 degrees F. drop in temperature below 60 degrees F.
- 2) We must make adjustments to the liquid feeding program during cold weather in young calves.
- 3) Older calves may need some change in liquid feeding but also require attention to calf starter feed intake. This means dairymen must have a good system of feeding warm water to promote starter intake.
- 4) Calves with reduced weight gains will also have lower milk production.

### ***Comments by Dr. Whitmore:***

We can all learn new information from research and from listening to experienced dairymen. I must admit that I had not thought much about overfeeding protein to calves in cold weather. We should discuss this with our clients so they can avoid these costs.

Feeding warm water to calves in the winter requires more labor and expense. However, we must tell our clients that this is still the most cost effective way to achieve growth and health in our calves. Calf starter is always cheaper than milk replacer.

We are really underfeeding our dairy calves while trying to get them to eat more calf starter. We should think of this in terms of beef calves. They nurse whenever they are hungry. The beef cows that produce the most milk will raise the largest and healthiest calves. We should feed our dairy calves the same way plus encourage intake of calf starter for more economical growth and rumen development. Dairymen almost always need our encouragement and advice on how to improve their calf feeding program. Another title for this article could be "We should feed our calves more milk replacer and calf starter during both cold and warm weather."

## ***FOOTBATH MANAGEMENT TIPS DURING COLD WEATHER***

Management of a footbath is difficult in warm weather and gets more difficult in cold weather.

Many dairies use footbath programs throughout the year while other dairies decrease their use in winter because of ice buildup. Some footbath products such as formaldehyde are less effective in cold weather.

Dr. DeFrain is a research nutritionist with Zinpro Corporation and he recommends the following management tips during cold weather:

1. Ensure that cows have access to a clean area after passing through a footbath.
2. Stop using formaldehyde when the temperature of the solution cannot be maintained above 45 degrees F.
3. Change the footbath treatment solutions every 150 to 200 cows.
4. Drain and rinse the footbath before mixing a new batch of solution.
5. On days when the footbaths are not filled with treatment solution, consider filling the pre-bath and treatment bath with a one percent mild soap solution. This will help to minimize manure build up on the feet.
6. If the ice buildup around the bath is a problem, consider the following:
  - a) Add salt or glycerin to the footbath solution.
  - b) Add heated floors around the footbath.
  - c) Set up temporary footbaths in heated areas.
  - d) Go to a spray program during cold weather.

**Comments by Dr Whitmore:**

I learned at Hill Top Dairy that if I wanted to reduce and control the incidence of Hairy Heel Warts that we must have near perfect management of our pre-bath and treatment footbath program. There were times when we had to use a footbath seven days per week. We found that management in cold weather requires more labor for whatever work that must be done. Someone has to be trained to manage the program and have the time to monitor it and change solutions.

I think these tips are all good and that they are good tips to pass along to your clients that are struggling with multiple foot and lameness conditions.

## ***HOW CAN WE PREVENT HYPOCALCEMIA?***

Most dairymen know that we can prevent nearly all cases of clinical milk fever in dairy cows by feeding anionic salts. But how are we doing with prevention of subclinical hypocalcemia?

A national survey in the United State was performed on 1,400 dairy cows in 2002. This survey revealed that 25 percent of 1st lactation, 42 percent of 2nd lactation and 53 percent of 3rd or more lactation had blood calcium levels below 8 milligrams per deciliter. This meets the definition of subclinical hypocalcium. US dairymen may be doing a fair job of preventing clinical hypocalcemia but not subclinical hypocalcemia.

Oral calcium supplements in the form of gels, drenches, or boluses have been around for the past fifteen to twenty years. They are usually used as a follow up treatment to intravenous calcium for treatment of clinical cases of milk fever. Wisconsin researchers decided to investigate the use of oral calcium supplements in prevention of subclinical hypocalcium and other metabolic diseases. So they designed a recent study to follow 928 second lactation and older dairy cows on two 3,000 cow commercial dairies. Both herds were using anionic salts in their ration. Both herds had less than one percent clinical milk fever and only nineteen percent subclinical hypocalcemia. This indicates they were doing a great job with their pre-fresh anionic salt feeding program. Both herds averaged close to 25,000 pounds of milk.

The design of the experiment was to give every second cow a bolus of calcium at calving time. The oral bolus contained calcium chloride and calcium sulfate. They monitored the treatment and control groups for blood calcium levels, milk production, and health problems.

The results revealed there were no statistical differences between the groups for blood calcium, milk fever, milk production, retained placenta, or displaced abomasum. The treated cows gave 318 more pounds of milk but it was not a statistical difference.

Next, the researchers focused on high risk cows such as the following:

- \* Cows that had twins or a stillbirth.

- \* Cows that had a dry period longer than 60 days.
- \* Cows that had a lameness problem.
- \* Cows that had a below average body condition score.

The researchers identified 324 of these high risk cows. When compared to cows in the control group, these high risk cows that received the calcium bolus produced 895 more pounds of milk. This amount of milk would bring in an extra \$179. The treated cows had fewer health problems but again the differences were not significant.

The conclusions were, that even in herds with excellent anionic salt programs and very little clinical milk fevers, calcium-bolus supplementation should be beneficial for high risk cows.

### **Comments by Dr. Whitmore:**

This is only one field trial so we should not try to draw too many conclusions. I believe that the dairy industry should use more calcium supplementation of high risk cows. They need all the help we can provide. Oral calcium bolus treatment is an underused treatment. The calcium boluses are much easier to administer than the gels or drenches.

This study reveals that these two large herds have a very good anionic salts program. Calcium supplementation should be even more beneficial in herds with an average anionic salt program. It does require very good feeding management and urine pH testing to make the anionic salt program be successful.

## ***DAIRY NOTES***

### **THE NATIONAL DAIRY FARM PROGRAM**

FARM is an acronym for Farmers Assuring Responsible Management. The purpose is to assure consumers that dairymen care about animal welfare and assure consumers that FARM members are providing a high level of animal care.

The program started five years ago when a few dairymen at a conference stated we needed a dairyman operated program to document their level of animal care for consumers. The growth of the program has been phenomenal. Approximately 50% of dairymen are now members.

The program is voluntary although some milk marketers require dairymen to be members of FARM. A trained evaluator visits the farm and performs an animal care audit. The visit usually takes three hours. The first part consists of 45 questions about basic management practices. This takes about 30 minutes. The second part consists of animal observation and a list of 31 questions. This takes two to three hours. The evaluator then provides a verbal and written summary to each dairyman. A portion of cows are scored for the following conditions:

- \* Hock and knee lesions.
- \* Sanitation and hygiene.
- \* Locomotion score.
- \* Body condition.

Dairymen are very interested in these four scores and often use them to improve their animal care. These four conditions are all strongly related to profit.

Many more FARM details are available from their website at [www.nationaldairyfarm.com](http://www.nationaldairyfarm.com) . Videos on animal welfare and comments from experts can be viewed.

### **Comments by Dr. Whitmore:**

The rapid growth of FARM is surprising and commendable. It is

a verifiable program and we will have to wait a few years to see if consumers have faith in the program. Third party audits are also a part of the FARM program.

Dairy co-ops that purchase and market milk really support the FARM program. This is a major reason dairymen are becoming members. It is a good example of the industry working together.

## **NATIONAL DAIRY CENTER FOR VETERINARY STUDENTS**

Four Veterinary Colleges in the US are collaborating to develop a National Teaching Center for students interested in Production Medicine. The four Veterinary Colleges are located at the Universities of Georgia, Kansas, Illinois, and Minnesota. These four universities received a \$700,000 grant from the government. This grant program awards money for programs that address local, regional, national, and international educational needs. The program must also encourage cooperation among universities and private business.

The National Dairy Center is located in the state of Minnesota. It is a joint venture between the University of Minnesota and Davis Family Dairy Farms. The center is located on one of the large dairy farms. There are housing facilities and teaching laboratories for veterinary students. The center serves as a birthing center for 6,000 calves each year and milks 3,000 cows on site. Students from each university will spend at least two weeks at the center.

### **Comments by Dr. Whitmore:**

This will be an excellent opportunity and teaching program for veterinary students. They will never forget this experience. This will encourage more students to enter dairy practice. Large dairy farms have their own hospital barn and calving center. They are really a teaching and research project in full operation.

I know Mr. Davis personally and he always wanted a closer relationship between his dairy farms and a trusted veterinary college. Mr. Davis had a difficult time learning how to manage a

large dairy. He sought out help from the Minnesota Veterinary College and now he has an excellent state of the art dairy operation. They are already talking about an international objective for the Dairy Center that will compliment his International Dairy Processing Plant.

This is the type of model veterinary teaching program that is needed in many countries. I hope veterinary leaders in Japan can foster long term relationships with large dairies and that it will lead to the development of a dairy teaching center located on a large dairy. Veterinarians in practice will also have meetings and seminars at the National Dairy Center.

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