

Cows need to be supplemented before they calve



# Dealing with DUMMY CALF SYNDROME

by LANCE MALES, DVM

The writer is a director with the Ontario Association of Bovine Practitioners and a veterinarian with Temiskaming Veterinary Services in New Liskeard

"DOC, I'M LOSING calves and I need you to come out and take a look."

Bob was an excellent producer, with 80 head of Char X cows. A quick check of the clinic records confirmed that Bob was current with his herd vaccinations, including protection against common causes of calf scours.

Like many producers, he had been unwilling to "give away" cows during BSE, so his herd size had increased. He had failed to expand his calving yard to match. Two years ago, he had suffered through an outbreak of calf scours that overcrowding inevitably brings.

Since that time, we had instituted a system of moving cow-calf pairs out of the yard weekly (modified Sandhills system). This had worked very well, and dropped calf mortality back to almost zero. Today's problem was different.

Bob was waiting when I pulled into his yard "Doc, the calves this year seem to be really sluggish. We've had a few stillborns, and a lot of the calves seem to take forever to stand

up and nurse. If we try to help them onto the cow, they seem stupid and don't want to suck properly. They just kind of stick their tongue out."

"Once they get scours or pneumonia, they die very quickly. Nothing that we treat with seems to be helping."

A quick check of the farm helped to rule out many of the common contributors to calf illness. The cows were clean and in excellent body condition. I counted seven full round bale feeders in the calving yard, so competition for feed and fighting were less likely to be an issue. The pack was well built up and bedded.

The older cow-calf pairs in the next yard looked fine as well. Bob told me that he had used the same bulls as the previous year, and hadn't had any problems. We then checked out his feed, the alfalfa-grass mix hay was green and leafy. He had a separate shed where he kept it stored. It was when we looked at his mineral that we uncovered the source of the problem.

The cows seemed to be eating enough mineral, they were consuming just over two 25 kg bags per week, however the vitamin E level was very low (1000 IU per kg, which translates to 100 IU per cow per day). Selenium was adequate (60 mg per kg, or 6 mg per cow per day). In the Temiskaming area, soils and water also have high iron levels, which interfere with the absorption of selenium. Blood samples taken from a number of cattle and horses in the region support the diagnosis of widespread deficiency. They seem to be particularly severe following a wet summer.

**Boosting vitamin E and selenium to the cows seems to help, but more research is needed**

**WHAT IS VITAMIN E AND SELENIUM DEFICIENCY?**

Many farmers are familiar with the classic symptoms of vitamin E/selenium deficiency (sudden death in growthy calves, coupled with gritty white streaks in the muscles of the legs, diaphragm, and heart).

It is better known as White Muscle Disease. Recently, we have started to speculate on the role a vitamin E/selenium deficiency may play in what can be termed "dummy calf syndrome".

Typical signs include calves that are slow to stand after birth, and may have difficulty in nursing. If you try to assist them onto the cow, they don't seem to be able to suckle properly, and may have their tongue hanging out of a corner of their mouth. These calves don't seem as hardy, and will experience a higher death loss due to scours or pneumonia.

In cow herds, it is well documented that a vitamin E/selenium deficiency will result in higher levels of mastitis and retained placentas, and reduced fertility. There is also some thought that a deficiency will also contribute to higher levels of vaccine reactions.

**WHAT DO VITAMIN E & SELENIUM DO?**

Vitamin E and selenium work together as powerful antioxidants in the immune system. They are vital in

helping the body recover from the day to day damage that we inflict on it. In "Dummy Calf Syndrome", that role is to help the brain recover from the damage inflicted during delivery, whether it be from direct compression on the head (cerebral vascular incidents, or CVI), or acidosis brought on by a temporary lack of oxygen. The problem tends to be most pronounced in bigger calves or difficult deliveries.

**CAN IT BE INJECTED INTO NEWBORNS?**

We have tried using injectable forms of vitamin E and selenium, however it seems to take a number of days before we notice an effect. In the deficient newborn calf, it is simply a case of "too little, too late". The effect of the injection only seems to last for approximately three to four weeks, after which time we may start to see calves dying from the more typically recognized White Muscle Disease. It is more useful in an outbreak of "dummy calf syndrome" to inject cows as they start to "udder up" (approximately one to two weeks prior to calving), so that calves are protected prior to birth.

**WHAT ABOUT BOB'S HERD?**

Blood tests on a few of Bob's cows confirmed low vitamin E levels. Bob switched to a higher vitamin E dairy mineral, which delivered 1500 IU of

vitamin E per cow per day. It cost him an extra \$2 per bag. Studies have shown beneficial effects of supplementing up to 4000 IU of vitamin E per cow per day.

There really isn't adequate research out there to tell us how much we should be supplementing cows. Many feed companies have settled on a standard 1000 IU per day for dairy cows, but will cut back for beef. Talking with other veterinarians, most recommend a daily intake between 1000 and 1500 IU of vitamin E and 5 to 8 mg of selenium for a beef cow prior to calving. Additionally, there are organic forms of selenium which are much better absorbed by the animal, but they also come at additional cost.

Within a week of the mineral change, Bob reported that his calves seemed like "completely different animals. They seem to hit the ground, stand up, turn around and go after the cow's udder. Also, most of the cows are passing the afterbirth almost on top of the calf."

Bob didn't lose a calf the rest of last spring. He decided to stay on the higher vitamin E level throughout the year (instead of starting one month before calving), and we anticipate less trouble this coming calving season.

Though huge advances have been made in the field of cattle nutrition over the past two decades, this composite case report highlights many areas that still need more research. We need answers to simple questions such as "what effect do varying levels of vitamin E/selenium supplementation have on colostrum quality (antibody level)?", or on cow fertility? What about calf vigour (time it takes to stand and nurse)? Hopefully someday we will be able to refine (or refute) some of the suggestions in this article.

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