

DROVERS

Managing pregnant feedlot heifers

By Geni Wren (7/1/2008)



Pregnant heifers in the feedlot cause a variety of problems. Pregnancy reduces feedlot heifer performance as a result of reduced feed efficiency, lower dressing percentage, infections due to calving and abortion, increased labor and medicine cost, and increased death loss. "In past publications, the cost of a pregnant heifer in the feedlot versus a non-pregnant heifer has been estimated at \$44 to \$115," notes Tom Edwards, DVM, Midwest Feedlot Services, Inc., Kearney, Neb.

Studies have shown that fall-placed heifers have an increased likelihood of pregnancy. "My experience is that the fall-placed, 7-weight yearlings have a high pregnancy rate and are more likely to be on feed when they calve," explains Andrew Bronson, DVM, Livestock Veterinary Services, Picture Butte, Alberta. "This class of heifer presents the biggest economic loss; therefore, this is the best place to start improving a pregnant heifer management program. The mortality rate from fall-placed heifers that calve in the feedlot is quite high."

The highest incidence of feedlot pregnancy occurs among heifers coming off of pasture. Kansas State University research showed that feedlot pregnancies increased from 24% in September, peaked at 64% in December, and tapered down to 22% in February. From March to August, the average pregnancy rate was 11%.

"Certainly, the fall/winter period is a time when risk for pregnancy in the feedlot is highest, and a bred heifer management program should be employed," Edwards states. "But given today's cattle markets, and feed and fuel prices, there's no margin for error. My preference is to palpate all heifers upon arrival, determine reproductive status and incorporate a management strategy that maximizes their health and performance."

Pregnancy detection by palpation

Edwards says the majority of feedlots feeding heifers palpate incoming heifers. Some feedlots forego palpation and simply mass abort all heifers upon arrival with a prostaglandin. However, pregnancies over 120 days of gestation may not be affected by prostaglandin alone. "Most feedlots would prefer to feed open heifers, but due to location, timing or lack of willing veterinarians to perform the pregnancy exam, they may or may not get them palpated," he says.

Palpation of heifers on arrival or a time shortly after arrival has been the primary method of pregnancy determination available to most feedlots. "This method can be highly accurate in detecting pregnancies greater than 40 days if the palpator is highly skilled," Edwards says.

Palpating can be a challenge to learn. "I have often stated that one needs to palpate 1,000 head just to learn and 10,000 head to be proficient," Bronson says. "This is difficult for young veterinarians."

Palpating heifers in a feedlot chute is not the easiest thing to do, especially when there are multiple animals to check. "In order to use veterinarians to palpate heifers at the chute, the first challenge is to get a veterinarian to the yard when you want to work the cattle," Bronson says. "This can be difficult, as many veterinarians are busy."

The second challenge is the cost-effectiveness of hiring someone to palpate all of the heifers. If the veterinary charges are applied to the pregnant heifers detected, it can become very expensive to find a pregnancy when the rate is low. Bronson says a 2% pregnancy rate at \$2.50 per head equals \$125 per pregnancy detected. "This may be more than the net benefit depending on the class of heifer and stage of pregnancy."

Repetitive stress injuries can occur by palpating heifers in a feedlot chute. "There's opportunity for injury due to chute operator error or directly from the heifer," Edwards explains. Long-term complications from palpating include neck, shoulder, back and hip injuries due to the repetitive motion.

"I know three veterinarians who had back surgeries in 2003," Bronson says. "I was having elbow and shoulder problems and thought it was time for technology to take over as it has in most industries, and that's when I bought an ultrasound machine."

Pregnancy ultrasound on the feedlot

Though not everyone will be willing to substitute an ultrasound machine for their arm, Bronson says, "Ultrasounding is much easier to learn, as we are all used to looking at images on monitors." Ultrasound technology has been used by bovine veterinarians and producers for years. It has not been widely adapted in the feedyard due to equipment design, the fragile nature of most equipment, cost and lack of training. Most ultrasound units veterinarians use have linear probes that provide a high-resolution image approximately the size of a credit card but are not as practical for feedlot use.

Edwards and Bronson have been using the Duo-Scan 3, a robust sector probe ultrasound unit that gives a 170° image of the pelvis and posterior abdomen for scanning a significant portion of the pelvis and abdomen in a few seconds with minimal stress to the heifer and minimal operator exertion. Five of Bronson's feedlots have made this technology part of their protocol and two of Edwards' feedlots have done the same. "This has improved the willingness and accuracy in the detection of bred heifers," Edwards notes.

Training in the use and care of the ultrasound equipment must be done. Edwards says that with a good understanding of reproductive physiology and anatomy, evaluation of ultrasound images is fairly quick and easy to learn.

Though most pregnancies can be easily detected using this method, some pregnancies may be missed if the heifer is very large and the pregnancy is low in the abdomen, or the pregnancy is less than 35 days old. Proper training and experience will help minimize these situations.

Bronson says an ultrasound can be leased for approximately \$4,000 per year, and it should last five or more years. "If the feedyard feeds 8,000 heifers per year, then the cost before labor is \$0.50 per head," he explains. "Labor is about \$0.15 per head if a \$15-per-hour employee does 100 per hour." Prostaglandin and dexamethasone are \$3 to \$4 per head. To find and abort heifers that are in a lot where 5% are pregnant costs about \$17 per head.

Feeding pregnant heifers results in a loss of \$50 to \$125 per head depending on pregnancy stage. Bronson says pregnancy testing and aborting reduces net losses due to pregnancy by half in some studies. "Lowering the pregnancy testing cost by using an ultrasound with feedyard staff can improve on this further."

Aborting heifers

Bronson notes that in Western Canada many feedlots mass abort heifers on arrival using prostaglandin and dexamethasone. However, with this program, 10% of pregnancies do not abort and there is a considerable expense.

It's important to abort heifers as early as possible to have a smaller fetus, which is easier to expel, and less feed is wasted in fetal development. Bronson says some publications and feedyard manager intuition suggest that settling the heifers for one to three weeks is better than aborting on arrival. Edwards agrees and says a two- to three-week delay will allow the heifer to enter a positive metabolic state, not conflict with vaccination programs and minimize retained fetal membranes and uterine infections.

When aborting heifers, the best results come from yards that keep the pregnant heifers in a separate pen until they have aborted. Some heifers require antibiotic therapy. The feedyard should have a written protocol for these cases developed with its veterinarian, Bronson suggests.

Managing the aborting heifers takes some extra staff to deal with calving and/or in-pen abortions. Bronson adds that feedlots that are using the ultrasound-based program have reduced the amount of calving skills required by their staff.

For feedlots that feed melangestrol acetate (MGA), a synthetic progestational steroid, Edwards notes that progesterone helps maintain the pregnancy in the heifer; therefore, MGA should not be fed at the time of pregnancy testing and aborting heifers. MGA should not be fed until heifers have been pregnancy tested and successfully aborted.

Pregnant heifer management options

Tom Edwards, DVM, and Andrew Bronson, DVM, offer these four options for managing pregnant heifers. They note that factors affecting success of pregnant heifer management include rate of placement in the feedyard, number of heifers per day/week, facilities and heifer holding pens, ultrasound and/or palpating skills of employees, time of year and the percentage of pregnant heifers expected, source of heifers (guaranteed open, spayed, or auction-barn assembled), quality of heifers and stress level on heifers (weather, trucking, commingling, etc.).

1. Pregnancy test, induce abortion and monitor

All heifers are pregnancy tested on arrival or shortly thereafter. Pregnant heifers are sent to a pregnant heifer holding pen and monitored for successful abortion and recovery of their health prior to returning to their home pen. Induction of abortion may be delayed until the stress level on the heifers has been reduced or to time the period of likely abortion (72–96 hours after induction) with labor.

Heifers should be monitored for successful expulsion of the fetus. If abortion does not occur, or is not noticed, the heifer should be re-scanned or re-palpated. If the fetus is still in the uterus, abortion should be re-induced and the heifer monitored in the holding pen. If the fetus is partially expelled, it should be manually extracted. Veterinary protocols for the treatment of these cases should be in place before induction of abortion in feedlot heifers.

This method will result in the highest number of pregnant heifers aborting successfully. There should be fewer long-term health problems, as treatment should be initiated early due to greater monitoring of the abortion process.

2. Pregnancy test, induce and home

Heifers may be pregnancy tested on arrival and abortion induced at the time of detection. This is often done when the number of heifers placed in a feedyard in a given period of time exceeds the capacity of the feedyard holding pens and/or the ability of the staff to monitor the cattle in smaller pens.

However, a significant number of heifers induced may not abort successfully and some will calve later in the feeding period. Health problems associated with abortion may occur in the home pen starting at the time of the first abortion and may persist for several days or weeks after the last abortion.

The advantage of this program is less time spent on monitoring heifers and less labor is required.

3. Induce abortion in all heifers

All incoming heifers are injected with prostaglandin hormones and/or dexamethasone. This will induce abortion in a large percentage of pregnant heifers. Estrus will be induced in many of the non-pregnant heifers. Minimal skill is required and the heifers can often be processed faster. If there is a significant number of pregnant heifers, aborting the heifers is usually cost-effective.

The disadvantages of inducing all of the heifers include that it's unknown which heifers are pregnant and which pens of cattle to closely watch. The cost of inducing each pregnancy can be very high, especially when the number of pregnant heifers is a very low percentage or a significant number of pregnant heifers don't abort and, therefore, go on to calve in the feedlot.

4. Do nothing to prevent pregnant heifers

Some feedlots choose to do nothing to detect/abort pregnant heifers. The advantage is less work at processing and a lower initial cost. If the pregnancy percentage is very low, such as in very young heifer calves, this can often be a cost-effective method. When the risk of pregnant heifers is higher, this method often results in significant economic losses. When a high number of calvings occurs in feedyards, the health crew is put under considerable stress. Higher stress levels in feedyard staff may result in longer-term feedyard staff problems.