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Animal Health
Fact Sheet



WEANING CALVES SUCCESSFULLY

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The production loss and death loss of calves at weaning is second only to the losses at calving. Weaning is a very stressful time and bovine respiratory disease (pneumonia, shipping fever, etc.) is a common problem. Coccidiosis and other digestive problems, such as acidosis, (grain overload) are also common.

Producers often ask what vaccines they should use to help control health problems during this period. There are some vaccines which can be of help. But it is important to recognize that there are a number of other factors which must be controlled in order to have a successful weaning program. Vaccines should be viewed as an aid to herd health programs, not as the cure-all.

Try to manage your cattle to avoid or minimize the effect of the potential problems listed below and then use a good, basic vaccination program to help support your management efforts.

1. Dust

Causes severe irritation to the upper respiratory tract and lungs and is a common problem in handling large numbers of cattle. Sprinkle irrigate the holding areas and corral pens to reduce dust.

2. Heat

Process the cattle in the early morning, where possible. Cattle tend to hold their body heat, so even if you work them in the early evening, when it may seem to be cooling down for you, they will still be retaining body heat. Any activity, or even just standing in the direct sun will elevate their temperature and endanger their health.

3. Bawling

This is another irritant to the upper respiratory tract. To minimize this effect, separate the calves away from the cows so, they can't hear each other.

4. Dehydration

Some calves are not acquainted with water troughs and are afraid of them while others are so busy bawling they don't take time to find the water and drink. Use of a trough similar to one

they may have been around may help. Allowing the water to continue to run a small stream into the trough may help get their attention and draw the calves to it. However, allowing the water to overflow the trough may result in puddles that will increase the opportunity for spread of coccidiosis.

5. Feed Change

Avoid drastic feed changes. A change in diet requires the growth of different organisms in the rumen to digest the feed. Depending on the type of feed it takes a few days to 2 weeks for the organisms to adapt. Grazing calves are often not familiar with drylot rations. Calves which have eaten some hay, even early in their life will adjust more rapidly to drylot rations.

The use of grass or oat hay is often more palatable to them than alfalfa or rations high in grain. If the basic ration is chopped, then scattering some long-stemmed hay over the top of it feed may help attract them to it and help them start eating. Many producers prefer not to use silage in the ration for the first 7–14 days and feel the calves adapt better than to rations with silage. Weaned calves will need relatively high levels of energy to replace the milk they are used to in order to keep them gaining. They will soon need a concentrate in the ration, in addition to the hays mentioned above. The amount of concentrate must be controlled carefully to prevent rumen acidosis.

Creep feeding the calves prior to weaning will be a great aid in their adaptation to feed. But the decision to creep feed should be based on practical and economic feasibility.

6. Dehorning

This is very stressful, especially if it leaves the horn sinus open or if there are flies present. It should be done at a younger age in almost all cases. If it has not been done prior to weaning, then it should probably wait until at least 30 days after weaning.

7. Castration

There is a growth benefit derived from intact males, but potential breeding problems and later stress offset the gains. It would usually be better to castrate at a younger age and then implant those calves. As with dehorning, if it hasn't been done prior to weaning, then it should probably wait until at least 30 days after weaning.

8. Deworming

Calves that have been grazing in permanent pastures or wet meadow areas may benefit from deworming. For the greatest benefit, discuss product selection and timing for use, with your veterinarian.

9. Close observation and early treatment

The calves must be observed at least 2–3 times a day for the first month. Any calves which are ill should be treated immediately, according to a preplanned protocol of products, selected after discussion with your veterinarian. For groups experiencing a high illness rate, consider taking rectal temperatures (in the morning) and treating all that are over 103.5 to 104 degrees F. Or, if the incidence is very high you may want to consider treating the entire group.

There are two major groups of vaccines that should be considered to assist weaning; those for clostridial diseases and those for respiratory diseases. The clostridial diseases (e.g. Blackleg, Malignant Edema, Enterotoxemia, etc.) usually cause sudden death. This emphasizes the importance of vaccination for prevention. Various combinations of from 2-way to 8-way are available and since they have been relatively cheap, most veterinarians have encouraged use of the higher combination vaccines to cover more potential diseases. However, recent studies have

shown that these vaccines with more antigens present, may serve as a stress to calves. Calves vaccinated with a smaller spectrum vaccine or those vaccinated with a less stressful, smaller dose vaccine, made significantly better weight gains. We need to re-evaluate our programs in light of this new knowledge.

The vaccines available to help control respiratory disease include IBR, PI3, BVD, BRSV, Pasteurella and Hemophilus. Some of the newer pasteurella products show promise of improved value but must be given well in advance of weaning to have time to stimulate any immunity by the time of stress. One new product requires only one injection, but this must be given with a generous lead time to be of value. Replicated virus from modified live virus vaccines for IBR can be transmitted to other cattle and some may have caused abortions. Don't use these vaccines on pregnant cows nor on calves which will be commingled with pregnant cows. There are other vaccines available which are safe for use in those situations.

It is critical for producers to remember that vaccines which call for a second (or booster) dose will usually NOT stimulate a protective level of immunity in that animal until 10–14 days after the second injection. The initial dose merely primes the immune system but gives very little protection. Producers continue to ignore that fact. The use of poorly timed vaccination programs, result in a severely reduced level of herd immunity.

Four alternative timing schedules will be described for the use of vaccines.

1. At branding and weaning:

With this system the calves are vaccinated at branding (1–2 months of age) and again at weaning. It eliminates extra handling but there is a real potential for a lack of immune response. Young calves do not respond as well to vaccines, there is a long period between the initial and second dose, and the time between the weaning dose and exposure is so short the calves may have almost no immunity from the vaccinations.

2. Prior to and at weaning:

The vaccines are given at 3–4 weeks prior to weaning and again at weaning. This provides the proper spacing of the initial and booster dose. But it doesn't allow any more time for development of immunity after the second dose and does require handling the animals one extra time.

3. Prior to weaning (two doses):

This requires that calves be handled twice in addition to weaning. The vaccines are given at approximately 6 and 3 weeks prior to weaning and then only the minimal handling for separation is actually done at weaning. The cattle must be relatively accessible if this is to be practical. Other procedures such as castration, dehorning and implanting can also be performed at these vaccination times.

4. Vaccinate at weaning (and perhaps again at 7 days later) with MLV (modified live virus) products:

This schedule has been used extensively in Kansas with good success. The calves are vaccinated at weaning and if the calves have been especially stressed, the MLV vaccinations are repeated again 7 days later. Most producers use only the intramuscular injections but some have used both the intramuscular and the intranasal form of IBR/PI3 at entry and then give just the IM form for the second dose at 7-10 days later.

Many producers have some fear of using MLV vaccines at the time of weaning stress and have even greater fears of working the calves again after 7 days. But, the use of these vaccines and this schedule on large numbers of calves in Kansas has shown no problems from either of

these “feared” procedures.

The pasteurilla or hemophilus vaccines are not used in this timing system because there is not sufficient time for the calves to develop protective immunity before they are into the high stress period.

In the fall of 1993, a trial was conducted at USU which compared alternatives two and four. There was no significant difference in the measures used to evaluate the health effects for the two vaccination systems. This and the experiences from Kansas and other areas should help producers and veterinarians to feel greater freedom in applying the system that will best fit their production and handling methods.

Whatever vaccine and timing schedule is used, it is critical that vaccines be handled properly. Read and follow directions for refrigeration, reconstitution, equipment sterilization, and avoiding sunlight and heat. Don't mix vaccines together that are not directed for mixing. Remember to observe guidelines to reduce injection site lesions. Use the subcutaneous route whenever possible and if the intramuscular route is needed, use the neck; don't inject into the top of the rump.

For a successful weaning, implement a good general management program and utilize a sound vaccination system as part of that management program.

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