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Preconditioning of Calves

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By strict definition, preconditioning is a vaccination, nutrition and management program. Preconditioning is designed to prepare young cattle to best withstand the stresses of adjustment when the animals are shipped from their point of origin and enter the channels of trade. Unfortunately, "preconditioning" is a loosely used term that can mean a blackleg shot or preweaning to one individual and a detailed, complex program to another. Consequently, the producer, buyer or veterinarian may have different understandings of "preconditioning." If the producer and buyer want to get the most out of a preconditioning system, the exact system should be recorded and used at marketing time.

When properly done, preconditioning is the best program available for preventing shipping fever and bovine respiratory disease complex (BRD). Preconditioning allows quick adaptation to feedlot rations and environment.

The full costs associated with sick cattle need to be appreciated. The average sick animal will shrink 10 to 20 percent. Medicine, treatment programs and death losses are expensive. Sick animals that do not die will cost an average of \$50.00 per head in drugs, labor, lack of weight gain,

etc. Obviously, disease prevention is much cheaper than disease treatment. Preconditioning is definitely an economically sound program.

A preconditioning program includes consideration of two major areas: immunization against disease, and nutrition and management practices that reduce stress. Any program that gives equal attention to both of these factors is more successful than a program that only looks at one area.

Immunization Against Diseases of Recognized Significance

The following immunization schedules are divided into strongly recommended and optional practices. The optional category takes into account local practices and individual herd health needs. The aim of this program is to reduce stress at weaning time.

Branding Time (1 to 3 months of age)

Recommended

- Dehorn
- Castrate
- Brand
- Infectious Bovine Rhinotracheitis (IBR), Parainfluenza (PI₃) combination vaccine

(intranasal vaccine is preferable at this age)

- Three-way clostridial bacterin (*Clostridium chauvoei*, *septicum* and *novyii*)

Optional

- Three or five-way leptospirosis (three or five different antigens)

14 to 21 Days before Weaning (6 to 8 months old)

Recommended

- IBR, PI₃, Bovine Virus Diarrhea (BVD) combination vaccine (IBR and PI₃ are boosters; BVD is one-time only; intramuscular vaccine is preferable)
- Three-way clostridial bacterin (booster)
- Brucellosis strain 19 vaccine for all heifers*
- Pour-on insecticide

Optional

- *Pasteurella* mixed bacterin (*Pasteurella multocida* and *hemolytica*)
- Three or five-way leptobacterin
- *Hemophilus somnus* bacterin (Somugen)

*Bangs vaccination is extremely stressful. If possible, this vaccination should be given alone 2 weeks before or after other procedures are done.

- Redwater bacterin (*Clostridium hemolyticum*)
- Enterotoxemia (*Clostridium perfringens*)
- Worm for internal parasites
- Vitamin A injectible
- Hormone implant (except heifers to be kept for breeding purposes)

Weaning Time

Optional

- Pasteurella mixed bacterin (booster)
- *Hemophilus somnus* bacterin (booster)
- Enterotoxemia (*Clostridium perfringens*) (booster)

Nutrition and Management Practices to Reduce Stress

As already mentioned, you should carry out a sound health program before weaning. (Calves should be weaned at least 3 weeks before shipping to market.) As part of preconditioning, calves must become familiar with feed bunks and water troughs. This will minimize stress in moving to a feedlot environment.

To further reduce stress, the calves should be fed rations similar to those they will receive after marketing. Weaned calves that have been started on feed will adjust to shipping and adapt to the feedlot better. They will be less prone to shrink and less susceptible to disease. Upon arrival at the feedlot, calves are dehydrated, hungry and may need medication. Familiarity with the feedbunk and watering trough can get preconditioned calves on the road to recovery much sooner.

Nutritional Management At Weaning

1. If possible, offer calves some dry feed before weaning.

2. Provide a diet at weaning balanced for energy, protein, minerals and vitamins. Vitamin A before or at weaning may be helpful.
3. Feed a high-quality hay at weaning and then offer a well-balanced, mixed ration for the remainder of the preconditioning period. Local conditions and feeds may dictate the exact type of ration to be fed. But, the preconditioning rations should be similar to those that the calves will be fed after marketing.
4. Include in a preconditioning ration such nutritious foods as excellent quality alfalfa hay, corn silage, rolled barley, cottonseed meal, early cut-grass hay and the proper supplements.
5. Provide fresh, clean water, preferably in a trough so the calves will become familiar with this type of water source.
6. Provide loose salt, free choice.
7. Feed calves in a bunk to minimize feed contamination and improve adaptation to bunk feeding. Check the feed bunks daily. Watch for signs of feed refusal since this may indicate early signs of health problems. Check both feed consumption and water consumption. Both should increase during the weaning period.
8. Calves will usually shrink 3 to 5 percent because of weaning but will then gain 30 to 50 pounds during a 30-day preconditioning period.

Parasite Control

1. Control external parasites such as lice and grubs with one of the systemic organophosphate insecticides by spraying, dipping or using a pour-on.
2. Check with the veterinarian in your region for the appropriate product to control in-

ternal parasites. The need for worming cattle varies greatly from area to area.

Dehorning and Castration

1. Dehorn and castrate calves at a young age, preferably 1 to 3 months.
2. Perform these procedures 2 to 3 weeks before but not at weaning time.

Minimizing Marketing and Transportation Stresses

1. Calves should be weaned at least 3 weeks before shipment.
2. Do not prolong processing. Moving and delivering calves quickly are crucial.
3. Avoid crowding and bruising.
4. Do not work, sort or move calves excessively.
5. Avoid conditions of extreme dust or wetness.
6. Feed and water calves before shipping.

Other Factors To Improve Health

1. Segregate sick or diseased animals that are to be sold.
2. Start adequate treatment promptly. After identifying sick cattle, either treat for 3 days or provide medication that will be sustained in the calf for 3 days.
3. Be sure tractor exhaust stacks are tall enough for good clearance of the cattle trailer.
4. Avoid ammonia buildup in trucks or at stockyards (from excess urine, manure, moisture). Ammonia contributes to respiratory disease.

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