

A Systems Approach to Improving the Consumer Product

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“Once the grapes hit the dock, it’s too late for us to correct the fruit. You can make good or bad wine from good grapes, but you can’t make good wine from bad grapes.”

Bob Reed, Llano Estacado Winery.

The above quote illustrates how it’s easier to make a quality product if you start with quality inputs. Once a producer has the right genetic components in place, it’s important to remember that how the cattle are handled prior to and during weaning can impact what the consumer finds in the meat case.

Preconditioning and backgrounding are two methods that can improve the end product for the consumer and make money for the cattle producer. Al Perez, General Manager of Swift Better Beef, says the benefits of preconditioning and backgrounding include: 1) minimizing shipping stress, 2) giving more predictable feeding results, 3) changing delivery and marketing schedules, 4) reducing morbidity and mortality, 5) reducing risk, 6) increasing predictability, 7) expanding marketing options, and 8) improving the value of calves.

Backgrounding and preconditioning are terms that have been loosely applied in the beef industry. There are many variations and confusion between these programs. No single system fits all operations. The program you use depends on the type of calves, feed resources, facilities, finances and the market target. This article will cover the two most common options for preconditioning and backgrounding.

Preconditioning Options

Preconditioning is a vaccination, nutrition and management program. The objective is to prepare the calf for entry into a backgrounding yard or feedlot. The vaccinations must be given enough prior to entry into a feedlot to build immunity. The recommended time is 45 days with a range of 30-60 days.

Preconditioning comes in two basic options. **Option 1** is a vaccination program about 3-4 weeks prior to weaning. Normally calves are dehorned, castrated, etc. at or before this time. The calves are returned to their mothers and may be offered creep feed. At weaning, if appropriate, the boosters to the vaccines are given and the calves are shipped to a feedlot directly off the cow. This option is usually referred to as VAC (Value Added Calf) 34.

Option 2 is based on vaccinations at weaning with boosters 14-21 days later. The calves are backgrounded for 45 days from weaning to shipping. This option is usually referred to as VAC 45 and is normally preferred by large feeders. However, a cost analysis should be performed to compare the options.

Backgrounding Options

Backgrounding is the growing of steers and heifers from weaning until they enter the feedlot for finishing. The length of backgrounding is normally 45-120 days and is designed for 1.5-2.5 lbs. average daily gain (ADG).

Backgrounding comes in two basic options. **Option 1** is normally a 45-day postweaning program designed to give calves a chance to “warm up” (1.5-2.5 ADG) on

higher energy feed, become bunk broke and build immunity via vaccinations. These calves are then sent directly to a feedlot to be placed on full feed (3.0 ADG). This option is designed for medium to larger frame (Continental and Continental-cross) calves.

Option 2 is for smaller to medium frame (British or British-cross) calves that need time to build frame (1.0-2.0 ADG) prior to placement on full feed. These calves should also be vaccinated and, if appropriate, given booster vaccinations. Option 2 may be in a backgrounding yard or on improved pastures. Backgrounded calves on pastures are usually referred to as stockers. It is normally about 45-120 days, but may be shorter or longer depending on the needs and/or frame of the calves or pasture conditions. Calves are normally sent to the feedlot weighing about 700-800 pounds.

Vaccinations

Vaccines are not 100 percent effective for various reasons. However, two key components that will increase success are proper handling of vaccines and healthy calves that don't have a compromised immune system.

Vaccines fall into two categories, killed and modified-live (MLV). The advantages of one are usually the disadvantages of the other. Killed means that no self-replicating microorganisms are present in the suspension. The advantages of killed vaccines are more stability in storage and lower risk of causing disease due to residual virulence or reversion to virulence. The initial vaccination with a killed vaccine will produce an appreciable level of protection in seven to ten days, but is not considered a strong immune response. The booster vaccination 14-28 days later will produce a faster and more intense immune response and is required to reach an acceptable level of resistance.

Modified-live vaccines contain microorganisms that have been weakened through culturing and laboratory procedures. The advantages of MLV vaccines include a stronger immune response achieved with fewer doses, possible stimulation of interferon production, and microorganism contained in the vaccine resembles the pathogenic form of microorganism more closely.

Vaccinations are important to prepare calves for the stress of a feedlot, especially for the exposure to bovine respiratory disease (BRD). It has been estimated that BRD accounts for approximately 75 percent of feedlot morbidity (sickness from disease) and 50 percent of mortality (death rate). Typically, cattle should also be vaccinated for IBR, PI3, BRSV, Pasteurella haemolytica and given a 7- or 8-way Clostridial.

Some studies have shown preconditioned calves are 19.5 times less likely to be sick in the feedlot than non-preconditioned calves. Other studies shown preconditioned calves experience 20.4 percent morbidity compared to 26.5 percent for non-preconditioned calves. Overall, the average rate of morbidity in the feedlot has been reported at 15 to 45 percent with a range of 0 to 69 percent. The normal average in mortality has been reported at 1 to 5 percent with a range of 0 to 15 percent.

Nutrition

The subject of nutrition is another article in itself. It is important to be aware of the nutritional needs of calves, especially newly weaned and stressed calves. Increased nutrient density and preconditioning may help offset the low feed intake (0.5-1.5 percent of body weight during the first week) of newly arrived calves.

Some minerals can interfere with other minerals or simply be deficient in the diet. Phosphorus, calcium, potassium and sodium chloride (salt) are some of the important minerals. Rations should also address the important trace minerals such as copper, zinc, molybdenum and selenium.

Impact of Disease

The impact of disease, primarily BRD, can be significant on profitability by reducing performance and carcass value. In a review of 17 feedlot tests with 2,146 feedlot cattle, net profit was \$57.48 lower for treated steers with 82 percent of this value due to mortality and treatment costs. Other studies show sick cattle gained 3 percent less and had an 18 percent higher total cost of gain compared to cattle that did not get sick. In a review of controlled studies the estimated cost of BRD was \$85/sick calf or \$17/calf fed.

Several studies have also shown reductions in carcass weight and quality grades. These reductions in quality grade can result in severe discounts as carcasses move from the Choice grade to the Select grade and from the Select grade to the Standard grade. Another study reported heifers treated for BRD had 37 percent fewer carcasses grading Choice and heifers that were never sick produced a net return that was \$37.34/head more than those treated two or more times.

. Disease can have a major impact on profitability by reducing performance, increasing medical costs and lowering quality grades. Preconditioning and backgrounding can be important components in a systems approach to reduce disease and improve the final product.