



QUALITY BEEF REQUIRES A QUALITY HEALTH PROGRAM

by Pat White, DVM

Producing good quality beef is as much an art as a science. Many individuals new to the business think that all you have to do is deliver an animal to the slaughterhouse, and miraculous little packages of frozen beef appear several weeks later. Actually, that is all you literally have to do, but the eating experience when that beef is cooked may be a major disappointment.

There is much more to the production of beef than just delivery of the animal to the slaughterhouse and picking up the final product. Beef production starts at its most basic, with the birth of a calf. While that seems oversimplified, it is nonetheless true. Every calf born, no matter how cuddly, teddy-bearish and adorable, should be viewed as future beef and handled as such. Unless you can guarantee that the calf just born will grow old, die and be buried on your property, the fact of the matter is that it is destined to be beef.

Starting with birth, that calf requires an adequate supply of colostrum to ensure an adequate immune system to fight every bug that is trying to find a foothold and cause disease. If that calf's fate is immediately known to be for the beef market, then the calf needs to put on weight virtually every day of its life until it goes to slaughter. Generally, while the calf is nursing its dam and learning to eat forage and possibly grain, it will be gaining weight because it is growing both skeletally and gaining muscle mass as well. There will be exceptions to this, if the dam's milk production is particularly poor and other feed sources are poor; but basically while on the cow, the calf will be receiving all it needs to ultimately become beef.

The first hurdle to overcome is when that calf is weaned. At this point, that calf needs to continue to grow and gain weight. The two do not necessarily go hand in hand. The calf can continue to grow its skeleton, while receiving inadequate feed for muscular gain; and may not be actually gaining weight even though it is getting taller. These calves will be very skinny, and can be recognized by either feeling along their backside, or if severe, just by viewing. Bones are prominent and there is little covering the skeleton except skin. As they get older, these calves may appear to have oversized horns or heads for their body.



*Always have a good system for loading your animals for transport.
The less stressed the animal is, the better the quality of meat.*

While these calves will make beef, they may not have adequate time to “finish” before they are 30 months old, and may have to be handled as “older” beef to protect the public from Bovine Spongiform Encephalopathy (Mad Cow). Many articles site that such animals will never make “good” beef. They will not be tender, they will not be marbled, because no matter the compensatory gain (something I firmly believe Highlands excel at) these animals cannot compensate for what equates to early starvation. Someone once told me, “if you are going to eat them, feed them like you are going to eat them”. That basically says it all. Weaned calves need to continue to grow and gain weight. This requires the best quality feed for the weanlings and all animals that are still growing. This can be good pasture, good hay or haylage, or less than ideal forage supplemented with concentrate, but it needs to be in adequate quality and volume for that calf to continue to grow and gain. Grass-based beef production will require absolutely top quality forage for young cattle to continue to gain.

The next hurdle to overcome is learning to properly handle those animals from birth on. Quiet stress free handling aids in growing quiet, stress free cattle. Cattle that are quiet are easier to move

without slamming into fences and injuring themselves (or their handlers) and are less likely to bruise themselves or others with their horns. Bruises may result in scar formation in the muscle with subsequent trim loss of meat.

In order to produce only high quality beef products, any **injections given to cattle over the entire course of their life must be given only in specified area on their body**. These areas are limited to the triangle formed on either side of the body by the shoulder blade and upper and lower line of the neck. All injections should be given in front of the shoulder blade, even in older cattle. The neck muscles are utilized only as trim and ground beef, so scar tissue formation will have minimal effect on beef quality.

If possible, injections should be given either IV (intravenously in the jugular vein) or SC (subcutaneously under the skin). IM (intramuscular, or directly into the muscle) are acceptable but do cause more scar tissue and should be avoided if possible. If vaccinations or medications give an option of IM or SC, always give them SC. Once mastered, SC injections are easier and usually are better tolerated by the cattle.

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All withholding requirements should be carefully followed. It is illegal to ship cattle to slaughter with drug residues present. This would include shipping cattle to sale barns, where their fate is unknown. In order to adhere to withholding requirements, it is essential that accurate records of injection and drug use be kept. If you don't remember when you gave the shot, you can't possibly remember when the animal is safe to slaughter.

All dosing requirements will be listed on the label and must be followed precisely. Withholding requirements are determined by use of certain dosages given certain ways. If you deviate from those, it may adversely affect withholding to the point that accurate withholding times may not be known. For example, there is a long acting antibiotic that is labeled for subcutaneous use in the ear only. If given in any other location, the withdrawal period is markedly extended; far longer than anyone would ordinarily imagine. Likewise, certain antibiotics are not specifically labeled for use in cattle. This is because the withdrawal period is so long (>18 months), it is not practical to consider their use in something that will ultimately be food. It is also important to remember that extralabel use (an alternate dosage or method of delivery not listed on the label) of any antibiotic in food animals must only be given only with a written prescription from your veterinarian. This includes extralabel use of over-the-counter medications as well. Certain drugs have no extralabel use and to give them by any other dosage for any reason other than listed is illegal (Baytril). Other drugs are just illegal period in food producing animals (diethyl-stilbestrol, metronidazole, chloramphenical, clenbuterol and the nitrofurans) and may not be used for any reason.

Needles should be sharp, to minimize tissue damage, and long enough to deliver the medication where it is intended to go. IM and IV shots require longer needles (1-1½ inch) than SC shots (½-¾ inch) to the actual volume of material injected at a single site should be limited. Usually this is part of the information provided by the

manufacturer on the label. As a general rule, no more than 10cc should be given at one site IM and no more than 20cc SC. IV injections can be very large but this method does require special training and drug dilution and delivery time may be of concern. (Calcium solutions can stop the heart if given too rapidly, for example.)

All these requirements are necessary both to ensure that withholding times are accurate and to minimize carcass damage.

These principles are just as important in beef raised in organic industries. Vaccinations are permitted in organic industries and the organic or natural label is not an excuse to withhold use of antibiotics for treatment if the animal is ill. Obviously, the use of an antibiotic will necessitate removal of that particular animal from organic or natural production but it will eventually go to commercial beef (assuming its survival) and all the requirements for low damage injections apply.

Good handling of cattle applies to transport and drop off as well. Overloading trailers may result in bruising. I am a firm believer that all cattle will do better if transported and slaughtered with a buddy. Anytime you separate a single animal, it will go through a great deal of stress, almost like it is being weaned again. A single animal is more likely to become frightened and can become a danger to itself and its human handlers. If possible, animals should be dropped off within a few hours of slaughter. Our processor allows us to leave hay in the pen overnight when we have to drop off cattle the day before. This goes a long way towards relieving our piece of mind (nothing to make you feel a little better about yourself and your beef when you leave your cattle happily munching on hay as you drive off) and I am convinced significantly reduces stress to the cattle. The more stress your animal undergoes just prior to slaughter, the more potential to adversely affect beef quality. Dark cutters are a common problem in stressed cattle.

Ultimately, the bull and brood cows will all end up as beef, in one form or another. It is actually



Good handling facilities are not only important for the handler's safety but also for the animals. Here is a nice facility with a squeeze chute designed for horned cattle.

surprising that many "cull" cows may have large cuts processed into pastrami or corned beef or as whole-muscle cuts in family-style steak houses. Aged cows and bulls actually account for about 25% of all beef consumed in the US. All producers need to recognize that their cows and bulls will become part of the food supply and need to be treated accordingly. Most of your Highland cows will end up as beef, regardless of your personal feelings in the matter.

Along those same lines, I am a firm believer in sending my old cattle directly to slaughter. We have had Highland cattle for a number of years, and although none of them qualify as pets there is still some emotional attachment to a large number of them. I feel it is my duty as their owner to give them as good a death as I possibly can. I would rather that my cattle are taken directly to slaughter, at a facility with which I am familiar, than be taken to a livestock market, possibly mistreated with hot prods or canes maybe because the handlers are afraid of horned cattle, and then loaded on large transports to be hauled to an actual slaughter facility. I think that philosophy has led to my personal appreciation of the value of "older" cattle as a food source; because we literally started eating them. Reducing stress in the older cattle is just as important as in the "market" steers.

There are any number of factors involved in raising beef. Ultimately, the end product is a reflection of the life of the beast. May that reflection be good.