What Does it Take to Produce the Best Steak?

by Angus Mackay

The author Angus Mackay with his cattle

This is a question I have been asked on many occasions over the years, even more so since the publication of Mark Schatzker's new book entitled *Steak*, published by Viking Press.

The short answer is time.

Consider for a moment the Scotch Whisky industry which is a fundamental part of my own Highland heritage or the very fine wines which are produced throughout the world. The essential ingredient to each is the indisputable fact that the maturing process in barrels requires time left undisturbed. It is the only way to ensure the proper development of the individual flavours. And it is often the defining factor which distinguishes one distillery from another.
The reality is, despite the best of modern technology, the various processes involved in creating fine whiskies and wines have changed little over the centuries. I maintain the same is true for beef. If you want to produce a product of the highest quality, consistently, year after year, you have to accept this fact from the outset. Whatever else you want to experiment with, you cannot trade off time. If you are prepared to accept this and to be patient then you have to ask yourself the next question. "Do I have the proper expertise?"

In this respect I have been very fortunate, having been involved with cattle all of my life. I can still vividly recall being taught how to hand milk an Ayrshire cow when I was about five years old. I very quickly came to the realization that unless I could gain the cow's trust, and be comfortable amongst the herd, then the chances of obtaining any milk would be remote. Instinct guided me then, as it still does now. I can think of few other tasks involving cattle which will give you the opportunity to assess cows individually and accept the fact that no two cattle are the same. All have quite different personalities and characteristics and consequently will have to be approached accordingly. If you are not prepared to accept this and work in concert with it, then cattle breeding, and in particular high quality beef production, are not for you.

After leaving school I moved on to caring for a herd of Highland and cross Highland Shorthorn cows on the high hill farm of Eden Taggart, a five thousand acre holding in the hills surrounding Loch Lomond. It was not until many years afterwards that I came to the realization of just how fortunate I had been to have the chance to care for and observe cattle in such extensive grazing conditions, while at the same time being allowed all the time necessary to ensure their well-being. That was the deal. It sounded good to me. But my boss was a hard man! God help you if anything went wrong with his cattle. That is when I first learned to appreciate just how valuable time is. It is regrettable now that the agricultural systems of today do not allow the young the same opportunities which I was privileged to enjoy. In this era of instant messaging and soundbites, there is no time. So how will the young farmers of today ever learn?

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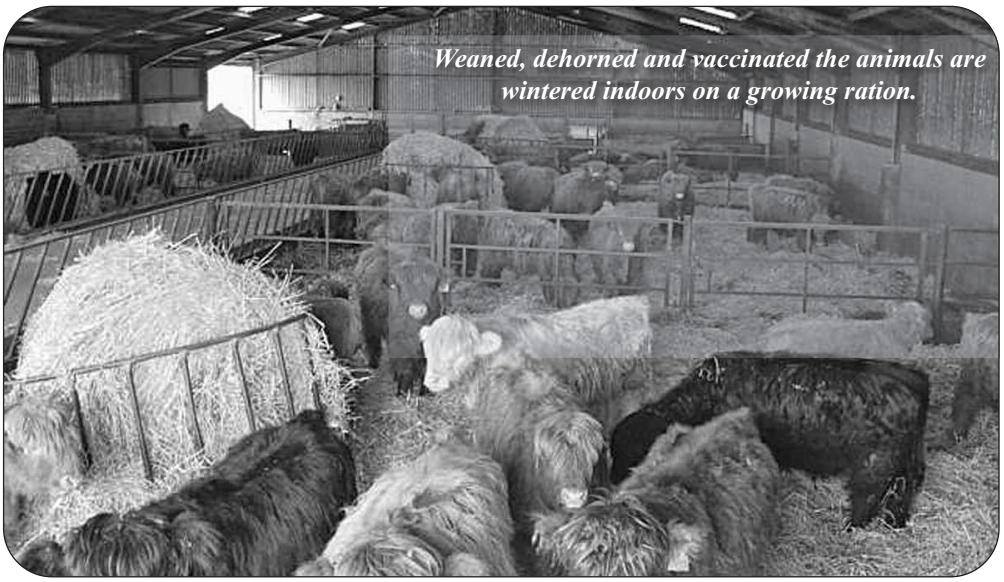
For me, the opportunity first presented itself in 1982 to gain valuable experience in commercial Highland beef production, with the formation of the Highland Cattle Society's first beef scheme. Its aim was to help improve the commercial value of Highland steer calves to the breeder. Weaned steer calves were brought to a farm in central Scotland from all over the country. Their weights averaged 410 pounds. On arrival, all calves were dehorned and castrated and then housed and fed indoors for the winter. It soon became apparent that this brought about new challenges. When housing large groups of Highland cattle good ventilation is of the utmost importance. Their initial barley-based diet proved to be less than ideal, containing a high level of urea. This led to an average weight loss of 11 pounds per steer and very poor performance over the first two months of being housed. It was not until the end of February that overall performance started to improve.

The pilot scheme ran for three years and told us as much about what not to do as what to do. The fact is that Highland cattle are different than other breeds, and have to be handled accordingly. One has to accept the fact that they do mature slowly and they have to be fed accordingly. Never at any time during this project did I hear mention the end quality of the beef. And yet, it was the outstanding quality of the beef which had its origins in the Highlands and Islands of Scotland which led to the establishment of the highly lucrative droving trade three hundred years prior. Every autumn tens of thousands of cattle would cross the Scottish Border to be fattened up on the rich pastures of Yorkshire and Norfolk for the London market. The cattle would have been between two and a half and three years of age, having been grazed throughout the summer months in the lush hill pastures of the southern Highlands. But it was this insatiable demand for beef sparked by the industrial revolution in the south which first brought commerce to the Highlands of Scotland. Suddenly cattle became trading vehicles and over a concentrated period of time pastoralism was replaced by capitalism eventually bringing about the end of the clan system. Ultimately, for the clan chiefs and land owners alike, cattle had a greater value than their own people.

The importance of quality and the factors which affect it were brought to the fore particularly during my association with the meat trade in the Netherlands. Two enthusiastic Highland breeders in Holland had established a very successful Highland beef business supplying the restaurant and home freezer trade. The growing demand was such that they were no longer able to source enough beef locally so turned to Scotland the homeland of the breed, to supplement their supply. During the summer of 1992, I was asked to canvas the Highlands to assess the possible supply of 240 finished Highland steers to be exported to the Nether-lands in carcass form from October through December. After a long discussion with a suitable slaughterhouse owner, and a tour of his premises, I felt he could meet the exacting standards of the Dutch importer.



Weaned, dehorned and vaccinated the animals are wintered indoors on a growing ration.

The Dutch meat wholesaler decided to go ahead on the condition that I personally monitor the transportation of the cattle from the breeders to the slaughterhouse, and he insisted the steers were not to be in the slaughterhouse any longer than eight hours. Full stop. This surprised me at the start, but I eventually understood the importance of why. He insisted I was also to be present during the slaughtering, taking each steer from the pen to the killing box one by one. When I asked why, the Dutchman went to great lengths to explain to me the importance of minimizing the stress on the animals for the twenty-four hours prior to slaughter. It would have a direct impact on the overall quality of the beef. He also went so far as to say that I was the only person he had seen who handled cattle correctly. The way he put it, "You do everything at the right speed" and by that he meant slowly. He had one other condition, which was he would send over his own food technologist each time we slaughtered cattle, to measure the stress levels of each animal after slaughter. As the readings were noted, I began to appreciate the importance of the calm, slow approach to cattle handling at all times, from birth to slaughter. Over three years we exported six hundred Highland steers to the Netherlands and it was during that time I learned the most about quality beef production. The experience I gained in this venture was to prove to be invaluable in setting up our own family Highland beef business in the mid-nineties.

Established from the outset to supply a product of the highest quality fifty-two weeks of the year, we recognized the fact that if we were going to be able to guarantee continuity of supply and ensure the highest quality of beef, we would have to be in control of absolutely every aspect of the production system. Our aim was to supply the local consumer with the finest quality Highland beef, bar none. Local food for local people was our raison d'être. We had no desire to supply what some might call the 'elite markets,' i.e. hotels and restaurants in Edin-burgh or London. The farmers markets were gaining in popularity and we saw this as the ideal opportunity to sell and promote our product. We believed nobody knew our product better than we did and the feedback from our customers was invaluable. This led to the decision to convert a redundant potato shed into our farm shop, which was to become a very popular outlet for local produce of the finest lamb, pork, chicken and vegetables in addition to our flagship product – Highland Beef.

Sourcing the right quality of cattle is the first step in the production chain. We chose to favour calves from the traditional homeland of the Highland breed, which is to say the west Highlands and Islands of Scotland, in the hope that if the farmers in those remote locations received a guaranteed price for their calves it would help to ensure the future of the breed and ensure valuable genetics for the future. Each autumn I would contact my suppliers to ascertain the numbers available. Our annual requirements were 180 weaned calves. Arriving on the farm in three batches from October to mid-November, we sourced our calves from twenty different producers we had selected over the years from over fifty Highland folds. On arrival, the calves were housed in a large open shed, well bedded with straw and given ample ventilation. Here they were introduced to their new diet, a very simple home mix of barley + straw + protein beans at two pounds per head per day, plus good hay. As

each batch of calves originated from different farms and had never been accustomed to anything but their mother's milk plus grass, this gave them the opportunity to get to know their new surroundings in peace prior to being weighed, and treated for internal and external parasites, as well as being dehorned and castrated. We offered a bonus of 12 pence per pound to breeders who would carry out these tasks when the calves were two months old. This certainly helped to reduce stress levels at this crucial time in their development. Unfortunately, not many of our suppliers took up our offer, the reason being they might castrate a future herd sire, in my view a pathetic excuse. My answer to that was if he does not show any potential at two months, why waste time trying to create in him something he can never be. Good Bulls are Bred not Fed. I firmly believe that if you are going to run large groups of Highland steers together, dehorning is essential to minimize their stress and reduce the affects of bullying. Dehorned cattle graze much more contentedly and thrive accordingly. Prior to the arrival of the second batch, I always ensured the first group was turned out to a grass field whilst continuing to be fed the home mix above. Come the end of November, all calves were taken to their winter quarters; 180 calves in a free-draining sandy ten-acre field, and then fed three pounds of home mix they were accustomed to per day + silage.

In the proper growing of Highland cattle for beef, the importance of weighing cannot be overemphasized as the weaning weight is the best indicator of when each steer might finish, and also the weight it might attain, all going well, whilst at the same time recording the pedigree of both the sire and dam. All of this information, along with the eventual killing weight, allowed me to monitor the performance of all of the folds from which we bought the calves, and to supply the information to the breeders if requested, which I was always happy to do.

All of the calves were treated for the active immunization of parainfluenza 3 virus and bovine respiratory syncytial virus. At £12 per calf this was an expensive but very cost-effective treatment, which meant once the calves were in their winter quarters they seldom needed to be handled. This lack of handling was of some concern to me, as to how the calves would react after four and a half months of uninterrupted freedom. I overcame this concern by making a point of WALKING around and amidst the calves for at least one hour three or four times a week. No quad bikes, no pick-ups, just walking with my fold. This meant that when it was time to remove the cattle to their summer pasture, they usually followed me right out of the gate in to the loading area. No stress. Those hours walking through the calves was time well spent; they got to know me and I got to know each and every one of them. One hundred and eighty calves going in the wrong direction at high speed is not recommended, so my 'wanderings' paid off. During their time on the farm I usually worked with the cattle on my own, both rounding up and selecting the finished cattle for slaughter on a weekly basis. I am of the opinion that given the opportunity, cattle become very accustomed to the same person working with them on a daily basis, thus reducing their stress considerably. This is an absolutely key factor in quality beef production. Stress and the impact it has on your steak is without question one of the biggest problems facing the world beef industry today. It also costs the industry millions of dollars to put mechanical vehicles in place, when simple time spent with then would achieve an even better end. There is no substitute for time spent in the company of your fold.

Come spring, usually mid-April, just when grass is about to come into its best, the young cattle are split into two groups according to their weight; the heaviest, in excess of 615 pounds, go to the best grass with a target finishing age of 26-28 months and a weight of 1056-1100 pounds. The lighter cattle are targeted for 28-36 months finishing at 1056-1177 pounds. Vitally important, all the cattle are treated for internal parasites at grass in May and August. Come September the very best of the heavy group are drawn out and put onto a finishing ration of 5 pounds of barley home mix. At the end of the grass growing session, usually the end of October, the remainder of the young cattle are housed and fed their second winter ration of 4 pounds of barley home mix + silage + straw to appetite. Additionally, all the cattle will have their backs clipped to minimize heat stress.

The finishing group of cattle are grazed adjacent to the farm and given access every morning to a shed for feeding. Every Monday the gate is shut behind them to enable me to handle, weigh and clip the cattle selected for slaughter that week. All of this is handled in a way which involves no stress for man or beast. It is all very calm. You will always have some cattle with temperaments that leave a lot to be desired, at times stone mad. They are always identified at the first weighing when eight months old, and seldom reach finished condition until well over 30 months, and they very rarely finish to my satisfaction. They make themselves known very early on. Cattle such as this are always put along with three other very quiet cattle prior to slaughter, and the slaughterhouse is warned in advance to enable them to be dealt with immediately on arrival and straight from the trailer, once again keeping their stress to a minimum.

Selecting live cattle for slaughter is an art that takes a lot of learning, and the ability to assess accurately when each individual steer is truly ready for slaughter. Focusing on this stage in particular will help to make your Highland beef business much more efficient. This factor, along with the knowledge that Highland steers will finish at a range of weights from 924-1320 pounds, and as I have already stated, the weaning weight is the most accurate way to estimate when you might expect each individual steer to be ready for slaughter, will guide you well. Trying to put an extra 40 pounds on to an already finished steer is not only very expensive, but it will ruin your profit margin.

As is clear from the beginning of this piece, physically handling your cattle on a regular basis is by far the best way to assess and ensure good condition. By placing the flat of your hand over the ribs on a regular basis, you will have a good indiction of fat cover; then placing your hand on the loin will help you to assess the depth and firmness. The more cattle you handle the more accurate you will become at selecting finished cattle appropriately. I can never understand how anyone can accurately assess Highland cattle, whether it be in the show ring or for slaughter without getting your hands on them. It is by far the best way to evaluate conformation and condition.

Finally, in creating the best quality steak, the proper care of the carcass immediately after slaughter is of utmost importance. Allowing it to cool naturally prior to being sent to chilled storage is essential. Hanging for up to 21 days in a chill where the temperature is constant is also highly recommended, as this will allow the carcass to mature gradually and ensure tenderness.

The last step, processing, is a highly skilled job, and is better left to experts, who will ensure that the appearance of your product is at its very best, with all the eye appeal required to ensure a premium price.

In summary, whether you intend to finish ten or two hundred cattle a year and plan to eat or sell your steak, the key factors remain the same:

1. The selection of weaned calves, average weight 400 pounds, which have been dehorned at the right age of 1-2 months.
2. Introduce winter rations gradually, in sheltered and dry surroundings.
3. Treat for internal and external parasites on a regular basis.
4. Handle regularly throughout the winter to monitor progress.
5. Graze during summer months as an individual group; do not mix with older cattle.
6. Introduce winter rations as the quality of the grass deteriorates in the autumn.
7. Ensure the cattle are always thriving at a regular pace.
8. Learn how to assess finished cattle accurately.
9. Leave the processing to the experts.
10. No bulls, No old cows, No short cuts.

And remember, your cattle, and ultimately your steak, will be the equivalent of a 25 year old bottle of GLENLIVET. Damned Good! And quite simply the BEST.