Introduction

I farm a 190 ha Lowland Beef and Sheep farm with my wife Eileen and our three daughters, near Stranraer in South West Scotland, 100 miles west of Carlisle. The farm carries 150 Suckler cows and 520 Ewes. 10 hectares of Spring Barley is grown for home consumption. I use predominantly Hereford Angus crosses, although there remains the legacy of a few misguided experiments in the herd. My excuse for keeping some of them is just to remind me just how bad they are! Charolais bulls are used as terminal sires with about 60 of the calves sold store at 11 months old and the remainder finished mostly off grass.

I closed the herd two years ago, mainly for biosecurity reasons, and now breed all my own Hereford Angus replacements. The herd became Johnnes accredited at the beginning of 2007.

The ewe flock comprises mostly Scotch Mules, sourced locally from one farm as gimmers, and some home bred Texel crosses. These are all put to either Suffolk or Texel Rams to lamb at the beginning of March. I aim to have all lambs finished off grass by the end of October.

In 2004 I became the third Scottish Monitor Farm, the first to be wholly funded by Quality Meat Scotland.

Reason for the study

If you want to start an argument in a room full of beef farmers all you have to do is ask them what the best beef cow is.

My own experience had left me more and more disappointed with the quality of bought-in replacements. At a farm sale one day, I bought a group of heifers that had caught my eye. These were my first Hereford Angus cross cows. I was intrigued when the vendor told me that this was the type of cow that most of the main beef producing countries in the world use.

The next time I was in a room full of farmers and told them I had bought these heifers and intended crossing them back to a native bull, the response was, “You’re going to do what.....?”

Objectives

There are many commercial beef farmers using many different breeding systems in the UK. Some
are very successful at what they do and, quite rightly, will continue to use that system. Others however, seem to have reached a crossroads where they are pleased with the calves they are producing, but unsure of cow performance. The top two concerns for most producers seem to be fertility and temperament. With conception rates in dairy herds now estimated to be as low as 40% and most continental breeds having “social issues” many suckled calf producers are looking for an alternative suckler cow.

“Production is Vanity, Profit is Sanity”

In many cases the farmer is focused on production, not profit. This can lead to a situation where suckled calves top the sales every year, but herd performance is poor, with a low calving percentage and high replacement rates.

The majority of the cows used are either from dairy stock or have been home bred using continental bulls. In both cases the genetics used have become extreme and the cow is a by-product of another system, rather than one built for the job.

British beef and especially Scotch beef have excellent product image and quality expectations worldwide. As producers of quality beef we must ensure that these reputations are maintained in the beef that we produce.

The main objective of this study is to provide farmers with the information to provide farmers with the information to
allow them to work out a strategy for profitable high quality beef production. This is no mean task, as I know from my own experience as a Monitor Farmer. Without the Single Farm Payment, any enterprise, especially beef production, struggles to make a profit. The latest annual report from Quality Meat Scotland shows that only 3% of the various suckler enterprises surveyed made a positive net margin. If the industry is going to make any money from beef cows it needs to take a good look at its most fundamental resource – the cow. The right cow has to produce one high quality beef calf, each year; at a profit.

I decided to travel to parts of the world with a similar climate to the UK and study their beef production and methods. I visited Argentina, Uruguay and Australia, and tried to stay in the more temperate regions to get the best overall picture of the production systems that were relevant to UK conditions.

Each of these three countries has no subsidy system, little regulatory interference and beef industries that are totally focused on the consumer. Beef consumption per capita is over twice that of the UK in all of these countries. The reason for this could be cultural, price led, or simply that the beef tastes good. It would appear that producers pay more attention to producing a uniform product and giving the consumers exactly what they want.

I soon found that travelling as a Nuffield Scholar opened doors that I did not even realise existed.

Conclusions
What I found in each of these two continents were producers that are, almost exclusively, using just two breeds of cattle. Nearly all the cows in the temperate regions of these countries were either Aberdeen Angus, Hereford or a cross between the two. Indeed the F1 cross, the first cross, known as the Black Baldie, was by far the most popular cow on the bigger scale operations. Even the pedigree Angus and Hereford breeders that I visited admitted that the F1 cross made the best suckler cow.

Further research has concluded that the reasons behind this crossbreeding success have mainly stemmed from producing a maternal type cow.

The advantages of a maternal cow cannot be attributed to a single factor. It is a number of effects and the interaction between them that allows the increase in performance.

Hybrid Vigour is a phenomena used by nearly every producer in beef production. Maximising its effect needs planning and strategy. Generally, the greatest benefit from hybrid vigour is realised for traits with low heritability, like reproductive performance and liveability of the calf. Highly heritable traits like feed efficiency and carcass quality exhibit little or no hybrid vigour.

Southern hemisphere producers are calving replacement heifers at two years old. The bulling heifer needs to be 65% of its mature weight at first service, and 85% of mature weight when she calves. Using hybrid vigour, and the early sexual maturity and high fertility of native breeds, this is easily achievable.

A useful side effect of this practice is that the mature weight of the cow can be reduced, with a corresponding reduction in feed requirement. Smaller cows eat less but they still have the genetic potential to produce calves with high mature weights. The younger heifer will obviously have more calves during her productive life, cost less to keep due to her size, and be more fertile as a result.

Monitor farm trials have shown spring calving Black Baldie cows successfully being outwintered on 20% less feeding than continental and dairy cross cows. Another trial with spring born Charolais heifers on identical rations, found the...
ones with Black Baldie mothers finished at identical weights, but 40 days sooner, than the remainder of the batch.

British native breeds are renowned for their easy calving traits. Pelvic shape and low calf birthweight ensure a live calf. Calving difficulties also have a negative effect on fertility, with cows failing or taking longer to get back in calf.

Tighter calving patterns ensure that all animals are calved before they go back to the bull. It is the easiest way to increase herd fertility and calving percentages. Southern hemisphere producers advocate an 8 week bulling period for heifers, to ensure only the most fertile animals are used, and a 10 week period for the rest of the herd.

Longevity is one of the most difficult factors to evaluate as to why certain breeds last longer than others. The reason for culling a particular cow very rarely comes down to one factor, and seldom is it old age. Fertility, milk production, disease and structural soundness will play the biggest parts in deciding whether a cow will see the bull the following year. Anecdotal evidence suggests that the Hereford Friesian was probably one of the longest living crossbred suckler cow types, but I am sure there are plenty of other breeders who will stick up for their own personal preference. Studies have concluded that Hereford crossbred and Hereford purebred cows had the longest productive life and Limousin cows the shortest.

As many as 700 herds in the UK fail a TB test every year. Evidence has also shown that the main cause of the spread of the disease is from the transport of infected cattle. Even with 7,276 herds under movement restrictions on the 31st March 2007 it would appear that government officials have still not found the true source of Bovine TB. Johnnes Disease is also becoming more common in beef herds and has extremely damaging results in closed herds due to the rate at which the disease can replicate and infect from dam to daughter.
With lower available labour on farms and an increase in reported injuries during cattle handling, temperament is becoming an issue. Australian researchers at the Co-operative Research Centre for Beef and Cattle Quality (Beef CRC) have measured the flight times of steers as they exit a crush. They concluded that the steers with the slowest flight times grew 0.38kg per day more than steers with fast flight times.

With the price of cereals increasing, suckler cow enterprises will need to make more use of forage, both in cow diets and finishing systems, to remain competitive.

**Recommendations**

British native breed cattle and crosses of British native breed cattle can easily meet these requirements. Using the phenomena of hybrid vigour between two native breeds will further enhance performance.

The industry needs a maternal cow. Producers need to have a strategy. Whether it is buying in high health status replacements, or starting a breeding programme to produce their own. To maximise profit they need to plan. Breed Societies must play their part and ensure that the best genetics for commercial beef production are available to producers. Show cattle should be judged on commercial traits. Maternal lines in bulls need to be promoted for replacement breeding. Most commercial beef producers have forgotten how to breed their own replacements. Pedigree breeders need to do more than just sell a bull, they also need to sell a strategy for replacements.

The UK beef industry cannot compete in a commodity market with these countries. We must use our full traceability and assurance standards to provide a premium product at a premium price. We need to employ the latest technology to guarantee eating quality and supply markets that want guaranteed eating quality.

The industry needs to emphasise the traceability of UK beef and the fact that no GM feed and growth promoters are used. If farmers would spend as much time looking after the consumer as they do playing the system, image problems would soon disappear.

Beef produced in other countries using methods outlawed in the UK should not be sold in the UK. It is as simple as that. However, given the scale of the industry, I have no doubt that these countries will produce beef to UK standards quite soon. We need to ensure the UK product stays ahead in the future using measurements for eating quality.

As I have just sold my last Charolais bull I intend to put my money where my mouth is and go completely native. Some may think this sounds a bit eccentric, but I am convinced this is the right strategy for me. The expanding market for high health status breeding heifers looks appealing, although I have had a bit of consumer resistance on price!

I have thoroughly enjoyed my Nuffield Scholarship. I have travelled to some fantastic places and met some very interesting and wonderful people. The big question now is: what do I do next?