

Sheep Genetics – **1982 to 2012 and beyond, Staying ahead of the Game.**

An article by Hans F Pörksen, sheep breeder

Farming in the uplands of the North of England I was looking for a breed that would produce the highest yield of saleable lean meat in the early 1980's and decided that the Suffolk would be the most suitable breed to use as a terminal sire for use on commercial mule ewes (Blue faced Leicester X Scottish Blackface) producing prime lambs on a grass based farming system, lambing in April and selling lambs off grass from June to October.

Having been involved in both the dairy and pig industry and observed the genetic progress made I decided to apply this technology to sheep and with the development of ultra sound scanning by Simm and Dingwall at the Scottish Agricultural College in Edinburgh the timing was just about perfect.

The most important when embarking on a breeding scheme is to have very clearly defined aims and objectives, or in other words you want to know where you are going to be in the future and know how to get there. Only traits that can be measured objectively are worthwhile to record and improve. Using BLUP (Best Linear Unbiased Prediction) and EBV's (Estimated Breeding Values) are most helpful, although one must never forget that the E stands for estimated. Membership of a Sire Reference scheme or annual entire breed records analysis is definitely worthwhile. I have concentrated on 8 and 20 week weights, muscle depth and fat depth and since the advent of CT scanning total lean meat yield and muscularity.

We are also looking at ease of lambing, ease of care in the first few days of life, resistance to parasites and dag scores. Genetic markers for resistance to diseases like foot rot are also on the horizon. As these are all more complex and therefore difficult to measure progress will not be as fast.

With the likely advent of more accurate carcass assessment by the use of visual imaging the amount of Saleable Lean Meat could be the most important genetic trait in the future for terminal sire breeders.

In practice what it has meant to the production from my mule ewe flock is that the Suffolk sired April born prime lambs, which used to weigh 40 to 42 kg, now weigh 46 to 50 kg and instead of 75 % sold off grass with the rest sold as stores, we now sell 98 % off grass without any supplementary feed whatever. Lambs are also marketed up to 3 weeks earlier. We also have an excellent outlet for lambs up to 28kg carcass

weight; these lambs have high lean meat yields and are not fat as most are classified as U3L.

All this has led to a great increase in financial returns.

We also select rams which are very tight skinned, which does appear to be linked to the amount of muscle in the carcass and only use rams without wool on their heads and legs below the knees and hocks. The reason for this is that most of our Suffolk X Mule ewe lambs are sold for breeding and this is what our customers want.

One must never forget to produce what the customer wants and that genetic improvement is permanent, cumulative and extremely cost effective.

Giving an animal a lot of extra food and making it look above average for the breed, is only inherited by its progeny if it is actually genetically superior.

The secrets of how to stay ahead of the game:

- a) Start with a ewe flock of high genetic merit, sound structure and good breed character. Any female not of the highest standard should not be included. If you are just starting out buy the best recorded females you can afford. There are always some excellent draft ewes or surplus ewe lambs or shearlings available.
- b) If you have limited funds consider buying less animals, but better quality, to start with. You will soon have any number of top rated females born into your own flock.
- c) Use the best rams of known genetic superiority that you can find. In a recording scheme any ram in the top 5% would do. Avoid extremely high indexed individuals unless they have progeny on the ground whose results are included in the index.
- d) Cull hard. Any animal not up to the standard you set, should be sold. If an animal is highly rated but has a fault, which could be inherited by its progeny, do not use it.
- e) Only keep females from the top 25% of the breed/flock.
- f) Never use a ram of unknown genetic merit. Don't be tempted by this outstanding show ram. All you are doing is buying a pig in a poge, and a years breeding is lost
- g) Use the most up to date genetic selection tools available to identify the superior animals. Look at what is happening in other countries. Redefine your aims and constantly check that your objectives are as clear as they can be. Although it is possible that a low index animal can breed outstanding animals, the chances of it happening are extremely remote.

- h) Be honest in all the records you keep, have a multiple system of identification. For example our ewes are ear notched at birth, ear tagged and tattooed later and have an electronic bolus. Do not rely on a single means of identification. At tuppung ewes are recorded daily. If you want to record a large flock use a system of recording, where parentage can be determined by blood samples.
- i) Make sure that the genetics you buy and use in your flock are from a reliable source. It can be a gamble to use an extremely high indexed animal in its first season. However if it works out you will be the first one with those results. If you want to play safe use progeny tested animals only and inspect its dam, sire and siblings.
- j) Decide which traits are important in your breeding programme. Traits depending on quite a number of factors usually make less dramatic progress ; single traits are much easier and faster to progress. For example selecting for easier lambing will be slower, than selecting for an improvement in eight week weight.
- k) Trust your own judgement and never listen to other breeders who do not record or those who ignore their own results. Well, to be polite you should listen to them, but never act on their advice.

These principles can be applied to any animal you breed.

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