

Managing movement restrictions and high mileage

Thorough planning and problem solving were both key to the HERITAGESHEEP UK project team's successful semen collection programme. And despite many obstacles and set backs, it has banked important and unique sheep genes for future generations

Movement restrictions, many miles of travel – over land and sea – and heavy snow were just some of the obstacles that the UK's HERITAGESHEEP project team managed to overcome during a vital programme of semen collection from Shetland and Lonk rams.

Heritage sheep breeds (HSBs) are defined as genetically distinct, geographically concentrated and adapted to their environments. Typically, these sheep breeds are 'local' breeds, traditionally farmed for commercial use, and play an important role in the culture and rural economy of the regions in which they are managed.

What is HERITAGESHEEP?

The aim of the HERITAGESHEEP EU project is to establish a European-wide conservation programme of HSB genetic resources for the diversification of production in livestock agriculture and for their central importance in the long-term sustainability of medium- to low-input farming systems. More information can be found on www.heritagesheep.eu.

And it's for this reason that semen from some of the best rams of each breed are being collected and stored for future generations – should they ever be needed. A threat facing all HSBs is the risk of disease entering the region in which the breed is geographically concentrated. Bluetongue and foot-and-mouth disease are just two that are fresh in farmers' minds. The impact of these diseases and from procedures such as culling, taken to prevent disease spread, can be catastrophic. This risk was highlighted during the foot-and-mouth disease epidemic in the UK in 2001, when regional breeds located in the disease centres suffered disproportionate losses to their gene pools.

COLLECTION CENTRE

The UK programme set out to collect semen from Shetland and Lonk rams. And collecting semen in the UK had its own unique problems, namely that sheep had to be transported to the collection centre in Edinburgh. “Unlike the other project teams in Europe, our semen collectors did not go ‘on farm’ to do their job. And all the collections were from live sheep too,” explains The Sheep Trust’s Amanda Carson, who heads up the HERITAGESHEEP project team in the UK.

All sounds relatively simple, and it would be if the many sheep that needed to be transported came from just one or two farms on mainland Britain, but the reality was that many of the sheep had to be transported from several different farms dotted across the Shetland Islands, which is situated more than 200 miles north of Aberdeen.

“But the first obstacle was to convince sheep farmers to take part in the programme,” explains Amanda, although she admits that this task was made slightly easier due to her role within The Sheep Trust and her contacts within the sheep breed societies.

“Fortunately both breed societies were willing to co-operate – that’s a huge help and got us off the starting blocks as far as getting farmers to volunteer their rams for collection semen was concerned.”

THE SHETLAND



Shetland sheep produce a fleece that is very fine and supports the tradition of knitting on the island – the wool is famous across the world. Shetland sheep also have the widest ranges of colours of any breed.

There are 11 main colours as well as 30 markings, many still bearing their Shetland dialect names including light grey, grey, white, emsket (a dusky bluish grey), musket (light greyish brown), shaela (a dark steel grey), black, fawn, and moorit (shades from fawn to dark reddish brown).

“The sheep’s grazing habits can influence wool colour,” explains Amanda. “And the programmes to control scrapie led to a massive reduction in the number of coloured rams so I suggested that we select coloured rams to participate in the semen collection programme.”

THE LONK



Lonk sheep were badly affected by the UK's foot-and-mouth disease epidemic in 2001 and The Sheep Trust collected semen from this breed in an attempt to conserve genetic resources that were at risk.

“More recently the National Scrapie Plan in the UK set up a semen archive to ensure that genetic material was not lost as a result of the removal of animals with the VRQ genotype.

“The Lonk breeders only submitted one ram to this project and so, of all the native breeds in the UK, the Lonk is the most under represented breed in the semen archive. Through our longstanding association the breeders were willing to participate with us for this project,” adds Amanda.

SHETLAND COLLECTION PROGRAMME

Shetland sheep are scattered across the Shetland Islands, so the first task was to get them all transported to the island's main port – Lerwick. Here they were inspected by a vet before setting sail, over night, to Aberdeen.”

Since the rams had to be in tip-top condition, in order for semen collection to be successful, they were housed in luxury accommodation – by sheep standards anyway – both on the ferry and in Aberdeen. “The ferry livestock accommodation had recently been re-vamped, so that was some good news for us,” says Amanda, “particularly since Shetland rams are prone to fighting.”

She says that Shetland rams are very naughty and bully each other. “They can't be transported together and the new accommodation allowed rams to be housed individually.”

After a brief stay in Aberdeen, the rams were then collected by a representative from Innovis (a specialist company providing technical support for UK-based breeding organisations) and transported by road to its collection centre in Edinburgh – another 175 miles south.

“So it was a long journey with a difficult start. Getting all the rams to Lerwick at the same time to catch the ferry was the toughest part. And the whole operation was made a whole lot tougher by the weather. We had some of the worst snow in the UK for 20 years while we were running this operation.

“It’s not something we expected and it did make things a lot harder. But we managed to get there in the end.

“Getting the sheep home proved most difficult as that was when the snow really hit us. It was difficult to organise the ferry crossing, since there’s only one sailing a day. And the snow meant that this phase was very much a case of ‘stop-start stop start’. But we got all the rams home eventually.”

LONK LOGISTICS

Snow also hampered efforts to collect semen from the second of the two UK sheep breeds – the Lonk.

There were two opportunities to collect semen, due to the seasonal nature of sheep breeding. And when the team made their first attempt, the six-day stand still for sheep was in place to help prevent the spread of disease from flock to flock.

“We couldn’t collect them by travelling from farm to farm and similarly they couldn’t be returned in this fashion either.

“So we organised for them to be both collected by us and returned to their owners at Clitheroe Market in North Yorkshire and both times we made provisions similar to those made on a sale day.

“And after collection and return these rams and all the sheep on their home farms were subject to the same six-day stand still rule as all other sheep,” explains Amanda.

Again it all sounds relatively simple, although it did again require a considerable amount of co-operation on the part of the farmers involved. And once again the weather served to complicate matters.

“Returning these sheep also proved extremely difficult due to heavy snow. Three times we arranged a date for the rams to be returned via Clitheroe and twice the snow intervened and we had to postpone. But we got them all home in the end.”

OBSTACLES AND CONCERNS

Bluetongue also caused a few headaches. Collection was scheduled to take place in October – the typical breeding season ‘window’, but the disease made an appearance in late 2008 and the team had to wait until November.

“All in all it was a logistical nightmare – complicated by geography, the weather and disease.

“And we were also really worried that once we got the sheep to the collection centre that the rams wouldn’t ‘perform’. We used artificial vaginas at the Edinburgh centre, for example, and we couldn’t be 100% sure that that would work as Shetland rams can be a little shy!

But all the TLC on route to the centre meant that the rams were ‘raring to go’. So Amanda and the team had worried unnecessarily. “And they’d all put on a bit of weight, according to their owners, during their ‘holiday’ – don’t we all!”

PROGRAMME SUCCESS

So semen from a total of 24 Lonk and 17 Shetland rams was successfully collected. “We were aiming to collect from 24 Shetland rams, but seven didn’t make it to the ferry. They’re seasonal breeders and we missed the window of opportunity with these rams,” explains Amanda.

“But that said, we’re really pleased with what we achieved and how well we overcame the difficulties that we were expecting – as well as those we were not.

“I think we did well and we’ve certainly done what we set out to do, which is to preserve and safeguard the genetics of these two HSBs for future generations.”

Rachael Porter - Journalist