

## **Ad-hoc race against the clock**

**A determined and persistent approach is key to the HERITAGESHEEP Dutch project team's success. And despite many obstacles and set backs, it's well on its way to achieving its semen collection target**

A logistical nightmare and a race against time describe the conditions and circumstances surrounding the programme of semen collection, recently undertaken by the HERITAGESHEEP project team in the Netherlands. But grit and determination sees it well on its way to completing the task with considerable success, despite the odd hiccup along the way.

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](http://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.

## SEMEN COLLECTION

With this in mind, the somewhat unconventional if not slightly bizarre practice of collecting ram semen has a somewhat sober and incredibly serious side. And with the threat of Bluetongue looming over all European flocks, none more so than those in The Netherlands, it is also being carried out with a degree of urgency.

But, as is always the case when working with animals, nothing is ever straightforward. But for the Dutch team the first ‘stumbling block’ was people! The team – which includes Yvette de Haas and Lucia Kaal, who are both based at the Animal Breeding and Genomics Centre at Wageningen University in Lelystad – first had to convince the breed organisations to participate and explain what the project was trying to do and why. And then began the wait – for the societies to come back to them with names, addresses and contact details of farmers with rams who were willing to donate semen.

Semen is being collected from three different breeds in the Netherlands – Kempen Heath, Milk Sheep and Black Blazed – and from rams all over the country.

## KEMPEN HEATH



“The Kempen Heath society was relatively keen to cooperate, once we explained that we wanted to collect and freeze semen from several rams –

between 10 and 20 – to help maintain and protect biodiversity both now and in the future,” says Lucia.

“But convincing them was just the first step – we then had to track down and contact individual farmers who owned rams and then explain what we wanted to do all over again. This was very time consuming and the Bluetongue disease threat meant that the clock was ticking.”

Kempen Heath is a breed that is usually kept in small flocks in The Netherland’s southern areas and rams usually go from one flock to another to ‘spread’ their genes in a wide breeding circle.

“The breed organisation has been very successful in creating a special market for Kempen Heath meat and demand is such that rams are often also slaughtered for their meat. So there aren’t many rams available,” explains Yvette.

“But luckily the breeding organisation and the farmers also saw how valuable our project was for the future security and success of the breed and they sold us 12 rams.”

The project team had to buy the rams as semen was collected ‘epididymally’ – or post mortem. “To put it bluntly, we had to go to the slaughter house on the day the rams were slaughtered and collect their balls!” says Yvette. Samples of each rams’ blood were also taken so that they could be tested for disease.

To date, 2,500 straws of semen has been collected from 15 rams Kempen Heath rams – that’s between 125 and 250 straws per ram.

**BLACK BLAZED**



People certainly proved to be more problematic than the sheep as far as the Black Blazed breed was concerned. “We found the owners of this breed of sheep were not only hard to convince to take part in the scheme, but also difficult to get on board,” says Yvette.

She explains that they simply weren’t very willing to participate and those who did help wanted only the very best rams added to the gene bank – and for a high price. “But when a breed is already classed as ‘rare’, you can’t be too fussy about the semen you collect. As far as we were concerned, it was all good and certainly much better than none at all.”

After a lot of negotiation, the team finally ‘banked’ a few Black Blazed rams, all the more satisfied with their achievement after such a tough struggle.

A total of 300 straws of Black Blazed semen has been collected from four rams.

**MILK SHEEP**



Milk sheep are kept by Dutch farmers for both commercial and pedigree ‘hobby’ reasons. The rams that the team collected semen from were predominantly from commercial farms and had to be ‘sampled’ while still alive. “We were collecting ejaculate semen because the rams were all still in use,” explains Lucia.

This presented its own set of problems, not least being that The Netherlands, unlike the other countries involved in the project, has no central holding centre where rams can go to be ‘sampled’. This meant that semen collectors had to go out and visit individual farms.



And to add to their problems, most of sheep farms they visited were ‘organic’ and, therefore, were not allowed to use hormones to synchronise the ewes and get the rams to ‘perform’.

“At first we thought that we could draw up a schedule so we could visit several farms in one day, but we soon realised that this simply wasn’t going to be possible. The chance of ewes being in heat on several farms

on the same day was very slim indeed if left to Mother Nature,” says Yvette.

“So we had to visit the farms on an ‘ad hoc’ basis, as and when there was a ewe on heat on the farm where the rams were so we could collect the ejaculate.

“If we got the call to say that a ewe was in heat we’d have to literally drop everything and head off to that farm immediately – there was no time to lose if we were going to make the most of the window of opportunity.”

### ‘LIVE’ COLLECTION

With this in mind, it’s hardly surprising that the Dutch project team preferred the post-mortem semen collection method compared to the ‘live’. “The former not only proved to be less time consuming and considerably easier but it was also a lower cost exercise, despite the fact that we had to buy some of the rams before they were slaughtered.”

Henk Sulkers and Kees Zuidberg, two of the project’s semen collectors, would often get the ‘call of nature’ and dash off to the farm, which could be at the other end of the country, only to find that the ewe wasn’t in heat after all and the ram or rams wouldn’t perform. “Very frustrating for us and embarrassing for the farmer,” says Henk.

“There would be three or more people there, all poised and ready with the semen collection equipment – and nothing would happen. So, a lot of time and money was spent and there was no semen to show for it!”

To date 950 straws of Milk Sheep semen has been collected from 10 rams. And semen from between five and 10 more Milk Sheep rams is scheduled to be collected during May and June.

### MISCOMMUNICATION

Miscommunication also caused confusion and embarrassment. Yvette recalls one instance where the team was expecting to collect semen from 25 rams at one farm, only to arrive and find that there were just five. Again, a disproportionate amount of labour, equipment, fuss and fanfare resulted in a few red faces.

And the job was made even more difficult on one unit when they arrived to find no electricity and no hot water. “Some farms were pretty remote also and proved difficult to find. We did get lost quite a few times – that was embarrassing for us,” says Henk.

Successful collections comprise around 16 straws of semen per ram. Semen has to be transported back to the lab at a constant temperature of 10°C and it's then frozen.

“As you can imagine, collection days were long days – whether we were on farm or at the slaughter house,” adds Henk.

## EARLY STARTS

Slaughter house collections required a 5.30am start and we were rarely finished before 7.00pm. We have to be there from start to finish to ensure that the testicles didn't get muddled up!”

As of March 2009, the Dutch team was about half way through its collection programme, with semen from 20 rams. Semen from a further 20 rams, predominantly Milk Sheep that are based in the south of the country, is still awaiting collection.

Henk is well built and can handle the more ‘wild’ sheep. “But when we began collecting semen, some of the sheep we were handling were not at all used to humans – far from ideal when collecting semen from live rams. And it took the best part of four weeks to make a successful collection,” he says.

“Rounding up some the rams was a real eye opener. Some of them were so wild that they jumped two metres in the air to get away from us when we tried to corral them – I've never seen anything like it.”

## ENTHUSIASM

All in all, the farmers and breeders of the heritage sheep breeds in the Netherlands have been and continue to be eager to help the project succeed. And why wouldn't they? “They're passionate and enthusiastic about their sheep breeds and, ultimately, want to ensure that these breeds survive,” says Yvette.

Logistical difficulties caused by the 2007 and 2008 outbreaks of Bluetongue have hindered the project, but have also served to heighten awareness about what the team are trying to do and just how vital its work is.

“Semen collected from rams that have or are recovering from the disease is also less fertile,” she adds. “So it really is a race against time – and disease – to collect as much quality, fertile semen as possible and store it away securely to safeguard the future of these sheep breeds.”

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