



Sheep milk management for cheese production

Innovation

MANAGING DAIRY EWES FOR CHEESE

Globally the sheep milk market is worth £23bn and is used to make a variety of high-value products from cheese to powdered infant formula milk. Sheep milk is an alternative to cow milk and provides a number of health benefits, including being a good source of protein, high in calcium, and can be suitable for those who have an intolerance to cow's milk.

Milk is, of course, a key ingredient in many products such as cheese, yoghurt and ice cream. The high solid content of sheep's milk, typically 5.4% protein and 7% fat, makes it an ideal ingredient for these products. Therefore there has been a rapid increase in demand for sheep's milk, not only in Wales but throughout the UK.

When compared to the conventional dairy cow sector in Wales, there is poor understanding of what factors control the bacteriological profile of sheep's milk. Ahead of this potential growth in milking ewes to mass production level, it was important that as much information about the ewes' milk itself was collected.

The group behind the project wanted to better understand the impact of the following variables on the bacteriology and composition of sheep milk by looking at the stages of lactation, the breed, with a focus on pure Friesland, pure Lleyen and Friesland cross Lleyen ewes and lastly the selenium diet supplementation for ewes.

BENEFITS OF THE FUNDING

In 2019, the project secured £40,000 of funding through the European Innovation Partnership (EIP Wales).

EIP Wales, delivered by Menter a Busnes, had received funding through the Welsh Government Rural Communities - Rural Development Programme 2014-2020, which was funded by the European Agricultural Fund for Rural Development and the Welsh Government.

Over 60 ewes contributed milk for analysis, with over 1,000 milk samples tested for a wide range of bacteria on a regular basis during 2019 and 2021.

Regular milk testing was conducted to assess whether there was a pattern in the bacteriological profile of the milk during the lactation cycle. Specific bacteria such as *Staphylococcus aureus*, which is renowned for being present in cow milk and linked to clinical mastitis were also measured, with Somatic Cell Counts (SCC) monitored every 3-4 weeks as a marker of udder inflammation, whether clinical or sub-clinical.



THE FUTURE'S BRIGHT...

With the growing market for dairy ewes across the UK and Europe, this project was instrumental in examining the bacteria associated with sheep farming and the possible control for mastitis. Supporting the Welsh dairy ewe farmers and producers of sheep's milk cheese is vital to grow the market in a safe and sustainable way.



"The knowledge we've gained from the project has provided a firmer foundation for my business relationship with Alan and a similar approach is being developed with other dairy sheep farmers. Knowledge does give power, and confidence.

"We all get the upmost sense of satisfaction knowing that our cheese Brefu Bach ends up on the cheese boards of the most distinguished eating establishments in London and occasionally Paris."

Dr Carrie Rimes, an award-winning cheesemaker

"Hopefully by increasing the understanding of this sector it will encourage more farmers to enter the dairy sheep industry. An increase in dairy sheep farmers will lead to a larger supply base of ewes' milk. This can create an industry of niche food producers using Welsh ewe milk as a core ingredient in their products.

"The group's vision is to be at the forefront of this emerging sector in Wales and to put a strong foundation in place where the production system is based on high quality milk for the consumer."

Geraint Hughes, Lafan Consulting