



EIPWALES

Cydweithio er ffyniant gwledig
Collaborating for rural success



Night Milk

Is it a feasible option?

BACKGROUND:

There is evidence that higher levels of melatonin, a sleep-promoting hormone, is found in cow's milk taken at night

PROJECT AIM:

To determine whether there is enough melatonin in the night milk to brand it for its sleep-promoting properties. Could 'night milk' be an option for adding value to farms that already milk during the night without going to any extra expense?

PROJECT TIMEFRAME: January 2018 – September 2019

"I have always been interested in the link between melatonin in cow's milk and the potential beneficial impacts this could have for consumers in aiding sleep." - Rhys Lougher, Ty Tanglwyst

- The two dairy farmers in the Bridgend area who are involved in the project milk their cows 3 times a day at 8 hour intervals which means that one milking occurs during the night.
- The milk from the three milkings is normally pooled together. In this project from September 2018 to April 2019 the milk collected during the night and day were sampled separately.
- Both milk samples were then analysed for melatonin levels and other related compounds using liquid chromatography-mass spectrometry.
- According to the EU Register of Nutrition and Health (EURH) guidelines, the level of melatonin needs to be 1mg per 250ml portion or higher to market the milk for its sleep promoting properties.

The Results

- From the 77 night milk samples analysed, no single sample showed any presence of melatonin above 0.00125 mg/250ml. Whilst this does not meet the required 1 mg threshold dictated by the EURH, it does exceed naturally occurring levels in humans (of 10-60 pg/ml).
- There was also no significant difference in melatonin levels between the milk collected during the night and during the day, and also no trend linked to seasonality, location or nutrition.
- On a more encouraging note, melatonin levels were not affected by the process of pasteurisation, with levels not differing significantly between raw and pasteurised samples. If a way of manipulating levels of melatonin in cow's milk could be found then this would not be affected by the processing of the milk.
- This project has demonstrated that in a commercial farm setting, the production of melatonin-rich milk may be more complicated than previously suggested in other studies.

