

CALM EWES PRODUCE MILK WITH MORE PROTEIN THAN NERVOUS EWES

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Stress and fearfulness from getting onto milking platforms, positioning of teat cups or milking can block milk let-down. Let-down problems may change milk composition, leading to poor quality milk (Labussière 1988), while cattle that are less reactive to milking produce more milk of better quality (Lawstuen *et al.*1988). Selection for low reactivity animals could overcome this problem. Using sheep that have been selected for their temperament, we have tested the hypothesis that sheep of low reactivity (calm temperament) will produce more milk of better quality than ewes of high reactivity (nervous temperament).

Fourteen calm and 16 nervous Merino ewes (3-6 years old) were selected for temperament using the arena and box tests (Murphy 1999). These ewes were milked using the oxytocin technique (Bencini 1995) by injecting them intramuscularly with 11.U. of oxytocin (Ilium Syntocin). They were milked once a week for weeks 2-7 after lambing, then once a fortnight until week 18. Milk yield was measured and milk samples were analysed to determine the concentration of fat and protein with a Milko Scan 133 (Foss Electric, Denmark).

There was no difference in the daily amount of milk produced by calm and nervous ewes. Calm ewes had a normal lactation curve while nervous ewes appeared to have 2 peaks, in weeks 5 and 7 (Figure 1). The concentrations of protein was higher by approximately 0.4 percentage units in the milk produced by calm sheep compared with milk from nervous sheep (Figure 1, $P=0.03$). The 0.5% increase in the concentration of milk fat was not significant ($P=0.17$).

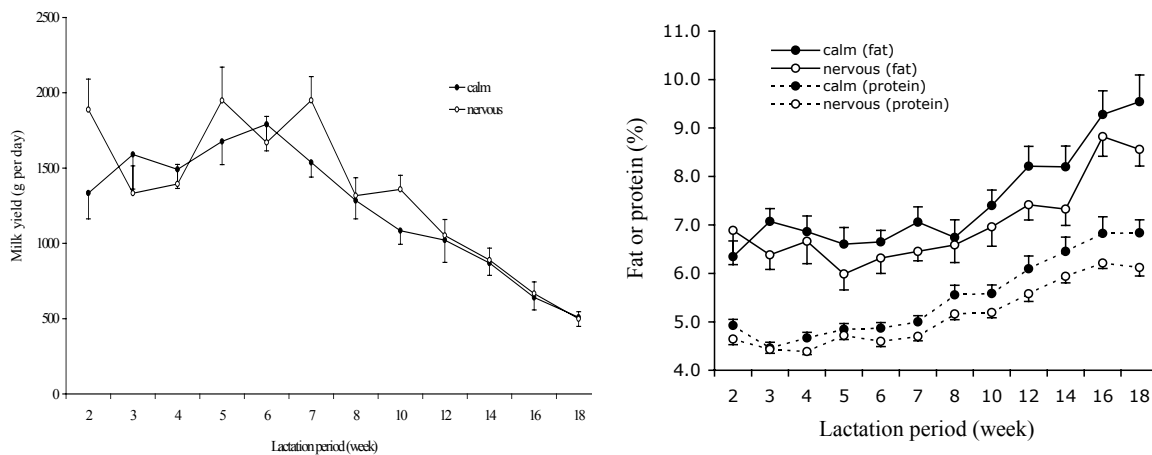


Figure 1. Milk production (left) and milk composition (right) in ‘calm’ (n=14) and ‘nervous’ (n=16) Merino ewes (values are mean \pm sem).

The hypothesis that calm ewes produce more milk than nervous ewes was not supported although there was considerable variation between ewes in both groups (range 9-20 kg over the experimental period). The hypothesis that calm animals produce better quality milk than nervous animals was supported by the result for protein concentration. In conclusion, Merino ewes of calm temperament can provide better quality milk indicating that temperament should be considered when selecting dairy animals.

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