

# The effect of suckling following mechanical milking on milk yield, milk composition and somatic cell count in dairy cattle

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**Introduction** In organic dairy production systems and in developing countries cows are frequently suckled following mechanical milking. However, the effect of increasing milking frequency by suckling following mechanical milking has received little experimental attention. The aim of this experimental work was to assess the effect of suckling in addition to mechanical milking on the milk compositional content and yield, SCC and milk yield.

**Materials and methods** Two experiments were carried out in Colombia using multiparous (Holstein x Dairy Short Horn and Harton del Valle) dairy cows. Cows were allocated at 3 days postpartum to their respective treatment groups according to previous lactation yield, milk composition, calving interval, live weight and condition score. In experiment one, twenty four multiparous dairy cows were allocated to one of two treatments for 180 days; 12 cows not suckled (NS) and 12 cows which were suckled twice daily following mechanical milking. In experiment two, thirty eight cows, were allocated one of two treatments for 120 days; 19 cows not suckled (NS) and 19 cows which were suckled once daily following the afternoon milking. Suckled cows were suckled for 15 minutes following mechanical milking only and these calves were weaned at 6 months of age. Data was normally distributed and analysed using the (Minitab) analysis of variance Generalised Linear Model command. A significant effect was determined from a 'P' value (<0.05) and treatments were compared using the students t test.

**Table 1.** Mean milk production and milk composition in cows restricted suckled twice daily and non-suckled cows (Experiment 1).

Treatment	Not Suckled	Suckled twice Daily	SEM	Sig
Milk yield (kg/d)	8.0	8.9	0.18	*
Fat (g/kg)	32.0	30.7	0.56	*
Protein (g/kg)	29.2	27.6	10.79	NS
Somatic cell count (000's)	106	85	2.85	*

The milk yield, milk composition and somatic cell count of cows suckled twice daily and non-suckled cows are presented in Table 1. There was an increase in saleable milk production in the suckled cows, compared with non-suckled cows ( $P<0.05$ ). The milk fat content of the saleable milk was significantly lower ( $P<0.05$ ) in cows suckled twice daily compared with non-suckled cows. There were no significant differences in saleable milk protein content between the suckled and non-suckled cows. The SCC was significantly lower in cows suckled twice daily compared with cows which were not-suckled.

**Table 2.** Milk yield and milk composition in cows suckled once daily and non-suckled cows (Experiment 2)

Treatment	Not Suckled	Suckled twice Daily	SEM	Sig
Milk yield (kg/d)	11.7	12.5	0.04	*
Fat (g/kg)	33.4	32.9	0.14	NS
Protein (g/kg)	29.8	30.0	0.07	NS

The milk yield and milk composition of cows suckled once daily and non-suckled cows are presented in Table 2. A significantly greater milk yield was found in cows suckled once daily ( $P<0.05$ ) compared with non-suckled cows. The milk fat or protein content of the saleable milk was not significantly different in cows suckled once daily compared with non-suckling.

**Conclusions** Suckled dairy cows (both one and twice daily) had significantly higher milk yields. Suckling cows twice significantly reduced milk fat content, but had no effect on protein content. This may be useful in manipulating milk fat content to fit in with market requirements or quota restrictions. Suckling cows one daily significantly increased yield, but did not affect milk composition. Suckling cows significantly reduced SCC.