

INTRODUCTION

Mediterranean sheep milk is mainly produced in family flocks, where ewes are milked twice daily (morning and evening). The number of daily milkings determines milk yield in dairy animals, but in Europe it has been proposed to simplify milking systems to reduce the workload and improve the quality of life of farmers.

Once-instead of twice-daily milking reduced milk yield by 20 to 60% in dairy ewes, but the activity of milking represents approximately a half of the daily work.

The aim of this work was to evaluate the effects of one vs. two milkings per day on milk yield, milk composition and somatic cell count in commercial Assaf dairy flocks in Spain.

MATERIALS & METHODS

Animals :

✓ 426 dairy ewes of Assaf breed, in 3 commercial flocks of the Spanish region of Castilla-Leon, were used to evaluate the effect of **omitting one milking daily** from early -mid lactation on lactational performance and udder health



Experimental Design :

✓ Ewes were milked **twice daily (2X)** from lambing and lambs were artificially reared.
 ✓ After 36, 41 or 98 d, according to flock, a half of the ewes (n = 220) were milked **once daily (1X)** until the end of lactation. The rest was milked 2X and used as a control.
 ✓ Both groups were fed and managed under similar conditions.

Procedures & Analyses :

✓ Individual **milk yield, milk composition** (fat and protein) and **SCC** were monthly **recorded** throughout 4 months.
 ✓ Data were analyzed by the PROC GLM and MIXED for repeated measurements of SAS (version 9.1, SAS Institute Inc., Cary, NC), including fixed and random effects, appropriate interactions, and the residual error.

RESULTS & DISCUSSION

Milk Production :

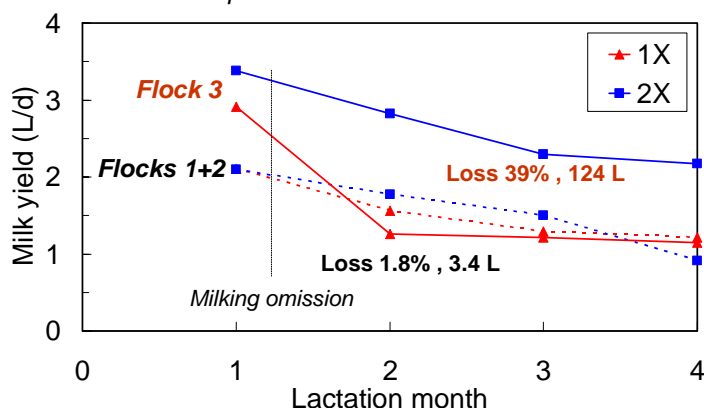
✓ Lactational performance **differed** according to the level of milk yield at the **start of 1X** (Figure 1).

✓ In the **first and second flocks**, in which milk yield averaged 1.91 ± 0.16 and 2.30 ± 0.04 L/d, respectively, milk yield loss due to **1X was not significant** (-7%; $P > 0.05$); total milk yield averaged 173 and 205 L (in 120 DIM).

✓ In the **third flock**, milk yield before 1X treatment was high (3.15 ± 0.09 L/d) and **greater milk yield losses** (-124 L, -39%; $P < 0.01$) were observed during 1X; total milk yield for 2X ewes was 320 L in 120 DIM.

✓ In the **first milk recording** after starting the milking omission treatment, 1X ewes suffered **55% milk yield losses** (1.36 vs. 2.82 L/d; $P < 0.01$).

Figure 1. Effect of milking frequency (1X vs. 2X) on milk production in Assaf ewes.

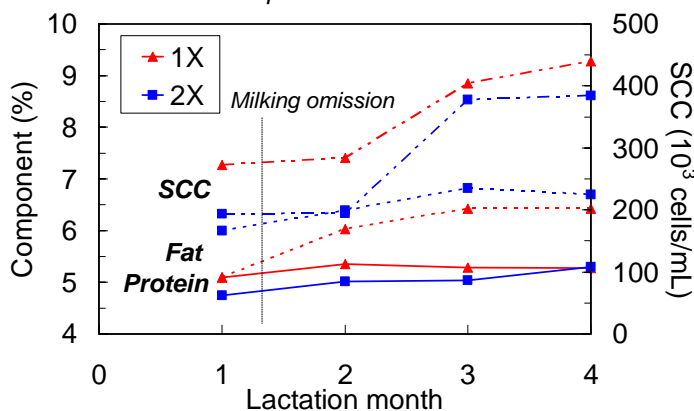


Milk Composition :

✓ Once daily milking had **no effect** on average values of milk **fat** (6.23%), **protein** (5.13%) or **SCC** (319×10^3 cells/mL) (Figure 2).

✓ However, these **values increased** ($P < 0.05$) as **lactation advanced** (fat, 5.50 to 6.56%; protein, 4.91 to 5.29%; SCC, 233 to 413 $\times 10^3$ cells/mL).

Figure 2. Effect of milking frequency (2X vs. 1X) on milk composition in Assaf ewes.



CONCLUSIONS

- Once daily milking could be a recommendable management tool in Assaf ewes when milk yield level is < 2.5 L/d.
- Under these conditions, milk yield losses are negligible and an improvement of farmer's quality of life is expected.