MILK YIELD AND COMPOSITION OF CINISARA GRAZING COWS SUPPLEMENTED WITH A LOW- AND A HIGH POLYPHENOLS FABA BEAN VARIETIES

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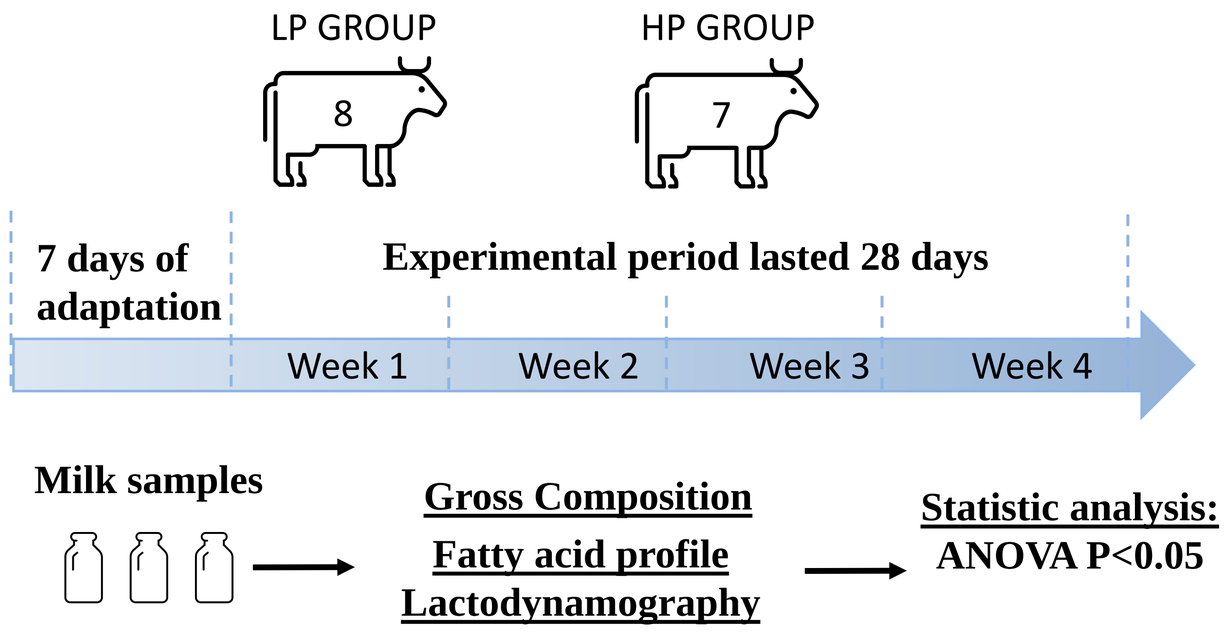
INTRODUCTION

The crude protein of fresh grass is generally characterized by a high degradability which can lead to reduced efficiency of its utilization. The presence of a moderate level of polyphenolic substances in the diet of grazing animals could help to overcome this problem. The aim of the study was to evaluate the effects of grazing supplementation with 2 varieties of faba bean with different polyphenols content on milk yield and quality in Cinisara grazing cows.

MATERIAL AND METHODS

Fifteen cows, homogeneous per day of lactation (61±29) and milk yield (12.9 kg±3.2) fed for 20 h/d on a mixed pasture (crude protein (CP) 17.9% DM) and supplied with grains (1.5 kg of barley,1.5 kg of oats, 1.5 of wheat) and a mixed hay (CP 10.2% DM) were distributed in two experimental groups and supplemented as follows: low polyphenols group (LP, 8 cows), 2 kg/d of faba bean var. Torrelama (4.4 mg GAE/g DM; CP 28.4% DM); high polyphenols group (HP, 7 cows), 2 kg/d of faba bean var. Fanfare (16.4 mg GAE/g DM; CP 28.9% DM).



The trial lasted 4 weeks during which individual milk yield was measured at the end of each week and individual milk samples from the two daily milkings were collected. Milk samples were analyzed for gross composition and fatty acid profile. Data were analyzed by ANOVA for repeated measures.

RESULTS

The HP supplement resulted in a higher milk yield (16.2 kg/day) compared to the LP supplement (14.5 kg/day), with a significance level of P=0.051 (Figure 1)

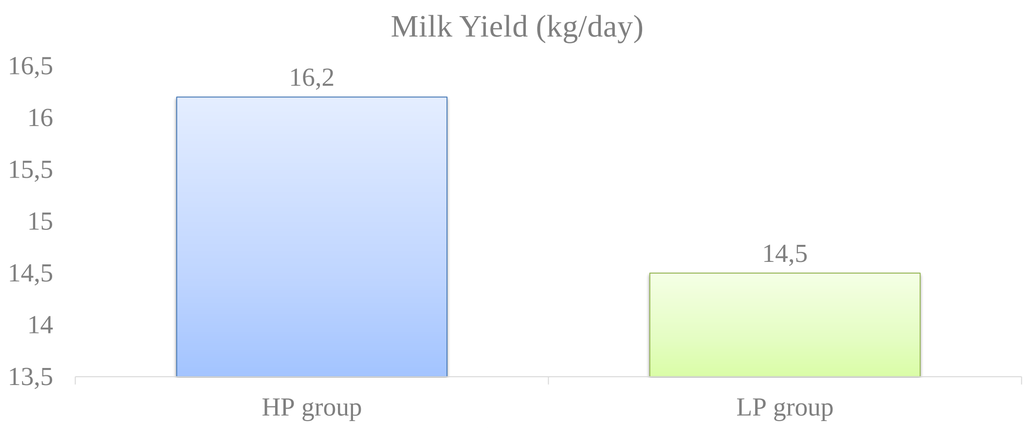


Figure 1

The LP supplement showed a higher casein level (2.78%) than the HP supplement (2.58%), with a significance level of P=0.050 (Figure 2)

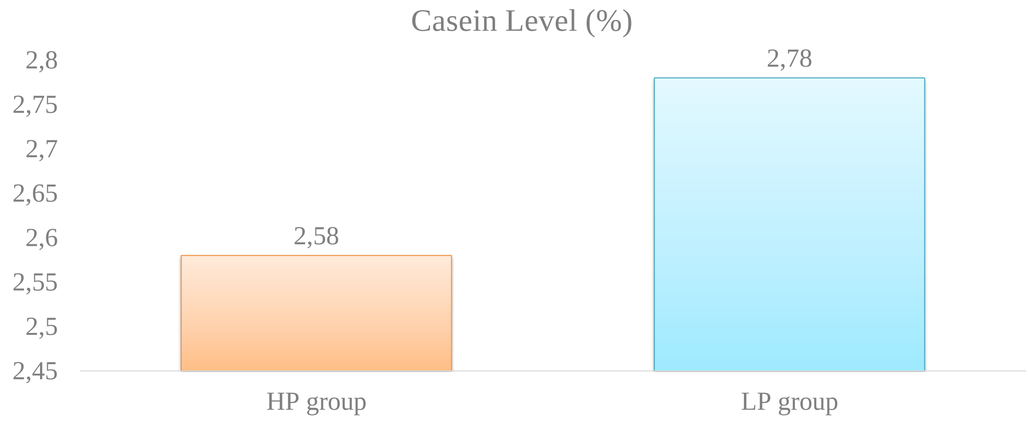


Figure 2

No other effect was evident in milk gross composition, fatty acid profile and milk coagulation properties.

CONCLUSION

In conclusion the faba bean variety richer in polyphenols supplied to cows grazing for 20 hours/d, therefore presumably with a very high incidence of fresh grass in the diet, caused an improvement in production performance. This milk yield increase was probably linked to a greater efficiency of pasture utilization. Moreover, the increase in milk production was obtained without important changes or worsening of the nutritional, technological, and nutraceutical quality of the milk.