Substitution rate and milk response to maize silage supplementation of dairy cows grazing low-mass pastures

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Introduction

When extending the grazing season into the autumn, the grazing of low-mass pastures is almost inevitable, potentially limiting pasture availability and animal performance.

Objective: To determine the effect of pasture allowance (PA) and maize silage supplementation on pasture intake when grazing low-mass pastures in autumn.

Materials and methods

- Treatments: 2 × 2 factorial design
  Two PA > 2.5 cm  
  Low PA  
  (18 kg DM/d)  
  High PA  
  (30 kg DM/d)  
Two supplementation levelsa (kg DM/d)  
  0  
  8  
  0  
  8

  a 7/1 mixture of maize silage and soyabean meal

- Grazing perennial ryegrass (Lolium perenne L.)
- 4 periods of 14 days (September and October 2008)
- 12 Holstein cows in late-lactation (18 kg FCM)

Measurements: pasture height (platemeter), pasture mass (> 2.5 cm), pasture intake (n-alkanes), milk production

Results

- Dry conditions before and during the experiment restricted pasture growth and reduced pasture quality.
- Post-grazing pasture height increased with both increasing PA and supplementation.
- Supplementation reduced pasture intake at both PA, the substitution rate being lower at the low than at the high PA (0.51 vs. 0.75).
- Milk production increased by 0.1 kg per kg PA, and increased by 0.67 kg per kg DM of supplement.

Conclusions

- On low-mass and low quality pasture, the PA had little effect on pasture intake, forage supplementation being essential to increase total intake.
- The level of substitution was low and the milk response to supplementation was high due to the low pasture quality (low energy intake) rather than the low-mass of the pasture.