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Effects of partial substitution of concentrates with maize silage in organic dairy cow rations on performance and feed efficiency[†]

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Abstract:

BACKGROUND

The general goal of organic dairy farming is to minimize purchased concentrate use and focus on milk production from forages. The aim of the present paper is to examine the influence of a partial substitution of purchased concentrates with home grown maize silage on feed intake, milk production and feed efficiency in rations for organic dairy cows. In the experimental treatment group (E), two-thirds of average herd concentrate intake was replaced with 2.7 kg maize silage on a dry matter basis.

RESULTS

In treatment E, total DM, energy and protein intake were significantly reduced as compared to the control treatment group (C). Daily milk yield decreased in E by 11% and milk urea content was significantly lower. Calculated milk production from forage was significantly higher (91 vs 71%) in treatment E. Efficiency of dietary nitrogen (N) utilization (calculated as milk N in % of N intake) was slightly improved in E and protein and energy balance (calculated as intake as a percentage of requirements) closer to zero than in C.

CONCLUSION

The present study indicates a potential to reduce levels of concentrates and substitute them with maize silage in organic dairy cow rations at least in the second half of lactation.