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KUUSELA, EEVA,

Annual and seasonal changes in production and composition of grazed clover-grass mixtures in organic farming

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## Abstract

A grazed field experiment based on a randomised block design was conducted in Eastern Finland to evaluate the potential of alsike clover (*Trifolium hybridum* L.), red clover (*Trifolium pratense* L.) and white clover (*Trifolium repens* L.) to support herbage production in grass mixtures under organic farming practices. The effect of seed mixture (alsike clover, red clover, white clover, white and alsike clover or grass mixture), year (1996, 1997 and 1998) and grazing period (5 per grazing season) on pre- and post-grazing herbage mass and chemical composition of pregrazing HM and post-grazing sward height was assessed. The nutritive value of herbage for milk production was also considered. Seed mixtures resulted in different pre-grazing HM and post-grazing sward heights, but similar pre- minus post-grazing HM. Compared with other mixtures, the proportion of clover was higher for white clover based mixtures. The white clover mixture had the highest crude protein content and lowest concentrations of cellulose and hemicellulose. In addition to seed mixture, the effect of year and grazing period on measured parameters was significant, highlighting the importance of grazing management. Moderate pasture herbage production and relative high nutritive value was achieved under organic practices, but the supply and nutritive value of herbage was variable between years and cases, unable to meet the requirements of lactating dairy cows. The proportion of clover in all seed mixtures decreased year on year, subject to seasonal variations that altered the nutritional value of herbage. White clover was the most suitable perennial clover species in Eastern Finland.

Contact [eeva.kuusela@joensuu.fi](mailto:eeva.kuusela@joensuu.fi)

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