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Grassland Farming and Land Management Systems in Mountainous Regions

Book of Abstracts

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fractionation would reflect the variation in PPO activity after OD but not after FD. The aim of the study was to investigate the effect of OD or FD on the protein fractionation of red clover samples, and to relate the specific PPO activity with the crude protein fractions. In total 12 red clover cultivars of different origin were grown in pure stands in a four-cut system in two management systems (without/with mechanical stress). The results showed a poor or no relationship of specific PPO activity and protein fractions, either if samples were FD or OD. OD resulted in a few less-soluble crude protein (Fractions A and B1), probably due to the higher temperature, but not due to the PPO activity.

1.65 Crude protein yield and quality of festulolium (×*Festulolium* Asch. & Graebn.) and hybrid ryegrass (*Lolium*×*boucheanum* Kunth.)

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Festulolium hybrids are promising grasses used in many European countries, especially in adverse environments. The herbage quality of *Festulolium* cultivars and *Lolium*×*boucheanum* were tested under the agro-ecological conditions of Latvia in field trials established on a sod-gleyic soil with two (N) fertilisation rates (120 and 180 kg N ha^{-1}). The results of the experiments in 2003-2007 highlight the significant dependence of the crude protein (CP) yield on the variety used and the N fertiliser dose. On average over three years of sward use, an increase in N fertiliser from 120 to 180 kg ha^{-1} contributed to an increase in the CP yield of 98 kg ha^{-1} or 30%. Higher CP yields were achieved by *Festulolium brauii* cultivars. Differences between varieties in neutral detergent fibre, acid detergent fibre content and in vitro digestibility were highly significant, but no significant effect of different N rates on these parameters was observed.

1.66 Effects of sowing and fertilisation in the establishment of annual legume rich permanent pastures

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A field experiment tested the effect of three fertilisation strategies (nil, mineral and organic fertilisation) on pasture establishment, measured by plant species composition in spring sward in the two first years after sowing two pasture types (simple annual, legume-rich mixture and complex annual legume-rich mixture) compared with unsown pastures. There was a positive effect of organic fertilisation on the spring floristic composition through the increase of sown annual legumes, without an increase of ruderal species. Farmyard manure substituted, with advantages, conventional sowing mineral fertilization in these conditions.