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Continuous grazing in comparison to cutting management on an organic meadow in eastern Alps

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Introduction:

Continuous grazing is an appropriate pasture system for dairy cows in low input milk production systems like organic farming. If a dairy farm converts a pasture-based system, cows will start grazing on a cutting-managed meadow. Due to the utilisation changing from cutting to grazing, a conversion of the botanical composition and the quantity and quality yield is expected. To document and assess such conversions, a three-year field trial was carried out on the organic grassland and dairy farm of the AREC Raumberg-Gumpenstein between 2007 and 2009.

Methods:

Location: *Eastern Alps (680 m altitude, 7 °C average temperature, 1000 mm precipitation per year)*

Variants: *cutting meadow and continuous grazing*

Parameters: *plant composition, below-ground biomass, above-ground biomass (cutting height 7 cm), crude protein (CP) and net energy (NEL)*


Figure 1: *Poa pratensis* - *Trifolium repens* - pasture

Table 1: plant composition in area percent rating

Variant	Grass in %	Legumes in %	Herbs in %	*Lolium perenne* in %	*Poa trivialis* in %	*Trisetum flavescens* in %	*Dactylis glomerata* in %	*Poa pratensis* in %	*Trifolium repens* in %
Grazing	68^{a}	18^{a}	13^{a}	20^{a}	5^{b}	2^{b}	3^{b}	21^{a}	17^{a}
Cutting	78^{a}	8^{b}	12^{a}	11^{b}	18^{a}	12^{a}	11^{a}	7^{b}	7^{b}

Results and conclusions:

Due to grazing, a significant lower coverage of bunch-type growth grasses on the grazing variant was found. Therefore, typical pasture plants covered a significantly greater area on the grazed variant. The below-ground biomass shows no significant difference between grazing and cutting at the three samplings. The harvested above-ground biomass showed a significantly lower yield in the grazing variant, but only in the trial years 2007 and 2008. This is interesting in terms of the CP and NEL yields: both of these quality parameters showed no significant differences between the management.

Continuous grazing can be a suitable system for organic farms in eastern Alpine areas that have more favourable climate conditions.

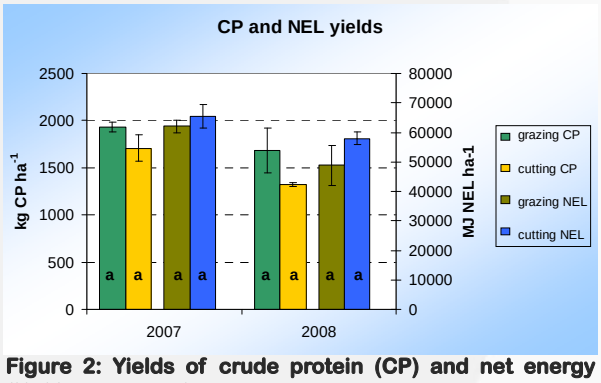

Figure 2: Yields of crude protein (CP) and net energy (NEL) in 2007 and 2008

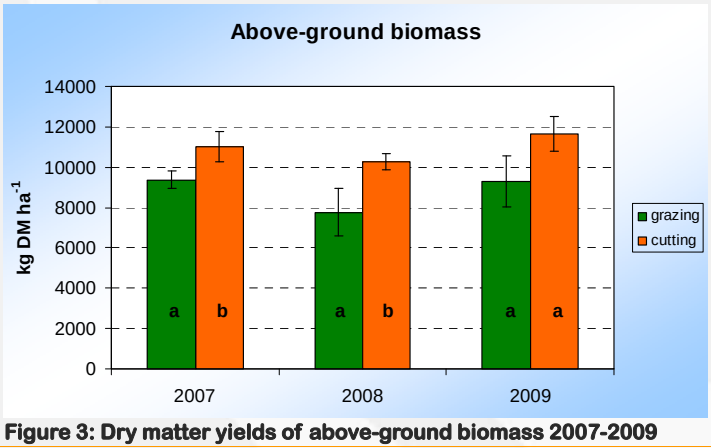

Figure 3: Dry matter yields of above-ground biomass 2007-2009

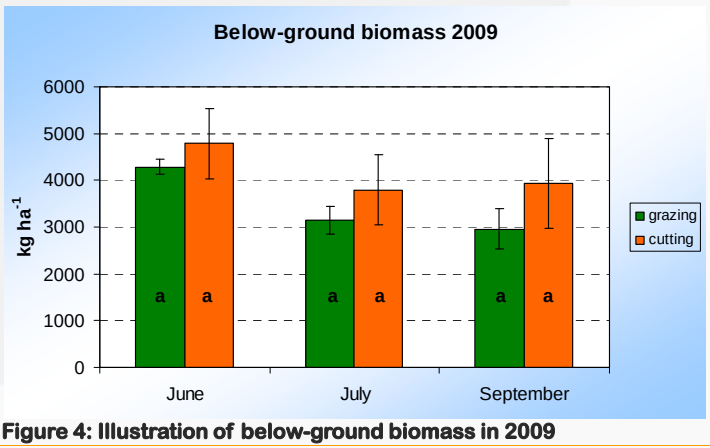

Figure 4: Illustration of below-ground biomass in 2009