Experimental simulation of intensive grazing and other management systems in a low mountain range

Funded by:

Southern Westphalia University of Applied Sciences
Grassland Research Station of the Chamber of Agriculture North Rhine-Westphalia and the South Westfalia University of Applied Sciences in Remblinghausen, Sauerland (410 m a. s. l.)
1. Introduction

Experimental simulation of intensive grazing and other management systems in a low mountain range:
- Comparing grassland management systems under identical conditions.
- Optimizing sward productivity and persistence under intensive grazing.
2. Materials & Methods

1. Continuous intensive simulated grazing:
   - Starting in early spring, dates determined by rising plate (7-10 cm)
   - Cut with a lawnmower at 4 cm
   - Treading simulation using a compaction roll with claw replicas
   - Application of slurry spots (1.5 l each)

2. Conventional continuous simulated grazing:
   - 4 cuts at 5 cm, using a Haldrup-harvester
   - Simulation of treading and excretion

3. Silage cut in spring followed by intensive simulated grazing:
   - Like first one, but with a silage cut in spring

4. Silage cuts without any simulated grazing:
   - Cut with a Halrup according to farm harvest dates.
   - Slurry applied broadly and no treading

All treatments received 230 kg N ha\(^{-1}\) a\(^{-1}\), 60 kg N ha\(^{-1}\) in mineral form.

Biogas slurry was used at 70/50/50 or according to hypothetical stocking rates.
3.1 Dry matter (DM) yields
3.2 Net Energy Lactation (NEL) contents
3.3 Crude Protein contents

The graph shows the variation in crude protein contents from 2013 to 2016. Each year is divided into months, and different line colors and markers represent different grazing practices:

- Continuous Intensive Grazing (green line, green markers)
- Conventional Grazing (4 x) (orange line, orange markers)
- One Cut followed by Grazing (blue line, blue markers)
- Silage Cuts only (4 x) (yellow line, yellow markers)
3.4 Net energy lactation (NEL) yields

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<thead>
<tr>
<th>Year</th>
<th>CIG</th>
<th>CCG</th>
<th>SIG</th>
<th>SCM</th>
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**Abbreviations:**
- **CIG**: Continuous intensive simulated grazing
- **CCG**: Conventional continuous simulated grazing
- **SIG**: Silage cut, then intensive simulated grazing
- **SCM**: Silage cuts without any simulated grazing
3.5 Crude protein yields

CIG  Continuous intensive simulated grazing
CCG  Conventional continuous simulated grazing
SIG  Silage cut, then intensive simulated grazing
SCM  Silage cuts without any simulated grazing
4. Conclusion

The treatments with the simulation of intensive grazing in some years were able to outperform treatments with four cuts only.

Intensive grazing management systems can potentially yield more energy for lactation and farm-owned protein.
Thanks for Your Attention!