Yield and quality increase in pasture land using foliar fertilisation

LWK Niederseelen, Bad Zwischenahn, Niederseelen, 2013

Background

The availability of phosphorus and molybdenum is severely limited in light and sandy pasture land with a low pH value. In spring, the availability of nutrients is also hampered by coldness and moisture. However, phosphorus is important in order to give the pasture land a good start for the vegetation, and molybdenum to boost the proportion of legumes. In this study, it was investigated whether yield and quality can be influenced by foliar fertiliser.

Result 1 – DM yield

Due to the dryness, yield was not very high, although it was increased by the foliar fertiliser. As a result of the P-rich foliar fertiliser, the initial development of the population was particularly improved, which had an effect on yield until the last cut.

Experimental procedure

Site: Sand, pH value 5.2 (B), P 7.0 (C), K 8.0 (C), Mg 6.0 (D), field quality rating (Ackerzahl): 35
Soil fertiliser: 15.03.2013 – NPK fertiliser (40 N, 100 P, 150 K), 18.03.2013 – Kornkali with MgO (100 K, 15 Mg), 11.07.2013 – 60er Kali (200 K), 4 x nitrogen fertiliser (220 N, 20 S, 27 Mg)
Experimental plan: 3 reps., application 3 weeks before the first cut and one week after the second cut

Table: Leaf analysis result for pasture land on 07.05. Undersupply is marked in red, oversupply in blue.

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>% DM</th>
<th>Nutrient</th>
<th>% DM</th>
<th>Nutrient</th>
<th>% DM</th>
<th>Nutrient ppm</th>
<th>Nutrient ppm</th>
<th>Nutrient ppm</th>
</tr>
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<tbody>
<tr>
<td>N</td>
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<td>K</td>
<td>4.7</td>
<td>Ca</td>
<td>0.54</td>
<td>Cu</td>
<td>0.6</td>
<td>Mn</td>
</tr>
<tr>
<td>P</td>
<td>0.50</td>
<td>Mg</td>
<td>0.10</td>
<td>S</td>
<td>0.10</td>
<td>Zn</td>
<td>55</td>
<td>Mo</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Fe</td>
<td>4.7</td>
<td></td>
</tr>
</tbody>
</table>

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Result 2 – Protein %

By applying high levels of nitrogen, the proportion of grasses is promoted and legumes decline. This antagonistic effect of the N fertiliser is to be taken into account when establishing legumes. As a rule, legumes are promoted with P and Mo fertiliser, which, in turn, has a significant influence on protein content.

Result 3 – Energy content

Particularly under these intensive usage conditions, it was possible to significantly increase energy content using a foliar fertiliser adapted to the site.

Recommended application

Give your pasture land 1 · 2 x 6 l/ha Lebosol®-Magphos + 0.75 l/ha Lebosol®-Bor at an early stage to increase pasture land yield and improve feed quality. To establish legumes, also apply 0.25 l/ha Lebosol®-Molybdän.