

1.04 Challenge and problems of forage conservation in mountainous regions of Austria

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A comprehensive silage monitoring project has been carried out in the years 2003, 2005, 2007 and 2009 in Austria. More than 3,670 grass silage samples from different Austrian sites were collected and analysed for dry matter content, nutrients, minerals, energy concentration and fermentation quality. Important management data were recorded by means of questionnaires and interviews. Apart from unfavourable natural weather conditions in mountainous areas the main reasons for unsatisfactory silage quality are obvious in management mistakes. Late harvest times resulting in high content of crude fibre, low concentration of easy fermentable sugar and difficulties with the compaction of such bulky material are still the main problems in practice. Forage contamination causing an increased risk of clostridia, respectively butyric acid in the fermentation process, is another serious problem that has to be faced. The results show that there is a considerable potential in Austria to improve silage quality in practice. Strong efforts have to be undertaken therefore to advise farmers specifically how to improve the ensiling procedure and to increase silage quality.

1.05 Can *Senecio aquaticus* be controlled in agricultural grassland?

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This study aimed at identifying an optimal combination of measures for the control of *Senecio aquaticus*, a poisonous species in agricultural grassland in Central Europe. A detailed field experiment was set up at five sites in Switzerland to test six treatments: ploughing followed by re-sowing with a ley mixture; harrowing followed by re-sowing; herbicide application; pulling or digging of individuals; mowing once a year; and a control without any manipulation. In addition, the soil seed bank of *S. aquaticus* was recorded prior to the study.

In the short-term, herbicide application ($P < 0.001$) and mowing once a year ($P < 0.01$) reduced the number of individuals of *S. aquaticus* most efficiently, but no clear effects were observed for the remaining control measures. Three years following the application, the measures that were the most effective in the short-term still performed best, but hardly any significant reduction was achieved compared to pre-treatment conditions. *Senecio aquaticus* formed large seed banks of more than 1000 germinable seeds m^{-2} , which contributed to the failure of the treatments, because any elimination of *S. aquaticus* individuals resulted in re-germination and replacement with new seedlings. We conclude that the control of established populations of *S. aquaticus* remains challenging and requires a combination of different measures applied over several years. Thus, the formation of populations with a soil seed-bank of *S. aquaticus* should be hindered by any means.