Field Lab Report: Kirkton & Auchtertyre
Managing Rushes Without Chemicals

SRUC Hill and Mountain Research Centre: Field Lab Findings

The Managing Rushes without Chemicals Field Lab is running over several locations throughout Scotland to explore the different ways that rushes can be managed. It has the following aims:

- ***Improve productivity*** *(to carry more livestock and produce more silage or hay)*
- ***Invest in grassland for long-term production*** *(to reduce the costs associated with reseeding and short-term weed control measures)*
- ***Improve wader habitat where appropriate*** *(to improve natural capital and provide an additional source of income as part of an agri-environmental scheme)*

The SRUC Hill and Mountain Research Centre has two neighbouring farms: Kirkton and Auchtertyre. There have been three meetings about rush control at their Auchtertyre farm, the main findings of which are summarised in this report.

The problem

Over the years a range of rush control measures have been carried out on many fields at Kirkton and Auchtertyre with mixed success: no single measure has been completely effective when used in isolation. In addition, increasing periods of wet weather have become more of a problem, with less time available to get out on field to carry out grassland management operations.

This site of our field lab is Auchtertyre's Welly Boot field (pictured). This was a good grazing field which has progressively declined in grazing quality, and become more rush infested over the years. It is located a reasonable distance away from the farms, has a lower yield potential than the ploughable in-bye fields, and has no drainage. This has made it a lower priority for improvement, and so will not receive as much resource (in terms of time and money) as the other fields. This reflects the reality of grassland management on Scottish farms, and highlights the importance of prioritising resource to areas that will give the biggest cost benefit.

The Welly Boot field is an important and valuable area of permanent pasture, and so there is still a real need to reduce rush infestation to improve productivity. By looking at it, we have focused on what can be done with limited resource to tackle rush infestation in more marginal areas. Activities have been carried out on one section of the field to see how effective they are at managing rushes in comparison to the rest of the field.

Actions taken

We looked at the soil first: getting it sampled and analysed, and assessing it for compaction. There are no drainage pipes in the field; however it is sloping and has some natural drainage. The cost of installing drainage is too high,

Field Lab Report: Kirkton & Auchtertyre
Managing Rushes Without Chemicals

and so we did not look at it in any more detail. We found that soil compaction was not an issue, but soil pH and nutrient (phosphate and potash) content were: both soil pH and soil nutrient status was too low.

The rushes in the field were topped in the first year in early summer (early June), and granular (prilled) lime was applied immediately after, which was made much easier after topping. Accessible areas of the field were then topped again in the summer before rush plants could set seed. In the second year topping (when possible) was continued.

Granular lime is more expensive than ground limestone, and has the same neutralising value. The benefit of using it was that it could be applied by the farmer with a fertiliser spreader, giving the opportunity to get on at short notice, when weather conditions were favourable. Going on to the field with a heavy lime spreader can potentially cause compaction in wet conditions. This would have been the case in 2015, when the soil was saturated for most of the year following very heavy rainfall.

A follow-up soil analysis was carried out a year after lime application, and the pH had not risen by very much. This may have been due to the soil pH being very low in the first place, so a lot would have been required to bring it up, or possibly it was due to saturated soils (in a year of high rainfall) washing out the lime. The group decided that liming should continue, and that further future soil analysis should be carried out to keep an eye on it.

As this is not a priority field there was not enough resource to apply nutrients or target livestock manure here. The better in-bye fields would get this resource instead.

What happened?

The rushes in the field lab area of the field have not been eradicated, but have been successfully managed to provide an acceptable amount of grazing for livestock. Following this field lab, the rush infestation is much lower in the managed area of the field (see picture).

Without supplementary phosphate and potash, and without draining some of the wetter parts of the field, it will not be possible for the grass to fully compete with the rushes. However the programme of liming and topping has definitely had an effect.

Summary

When tackling rushes it is important to think about the best use of resources. Fully eradicating rushes is expensive and time consuming, so in some situations you can consider doing a bit less to still get some degree of control. At Auchtertyre a programme of liming and topping had provided an acceptable level of control, but not eradication of the rushes.

Thanks to Ian Cairns, Agrifood Technical Services, John Holland, SRUC, and Ewen Campbell, SRUC