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Making most of grassland

Well managed inbye grasslands are crucial to the sustainability of any hill sheep system. They form the engine-block of the system and poor management of these grasslands can have a major impact on grass productivity and the availability of forage, particularly at tupping and lambing time.

However, regular reseeding of inbye grasslands now occurs much less on most hill farms than in the 1970s and 1980s. As a result, perennial rye grass and white clover have been lost from the swards and their productivity and nutritional value has declined.

At Kirkton & Auchtertyre we hadn't reseeded any of our 70 ha of inbye fields in over 20 years. And we had similarly fallen into the bad habit of over-utilising these fields throughout the year. So since 2012 we have implemented a programme of reseeding together with improved grazing management and rush control in a bid to improve the inbye grassland resource.

Detailed soil pH and nutrient mapping in 2013 and again in 2016 has been used to help deliver more targeted lime and fertiliser application. Since spring 2016 we have also been making much more use of the grass growth on the hill during spring and summer and paying closer attention to grass heights in our inbye fields, moving stock out or in when sward stick measurements suggest we need to.

During summer 2016 this resulted in our grass looking the best it has for a while and we got a bumper crop of 400 silage bales for use as winter fodder by our cattle herd. And despite the wet summer of 2017 we managed to get 322 square bales of silage from the five fields that were shut off - and analysis shows that it is better quality than what was made in 2016 with dry matter being significantly higher, an ME Value of 10 MJ/kg DM and the pH, protein and D-value all being within the optimum range.

Our reseeding programme has also highlighted how the low soil pH and high rainfall experienced on the farms makes it difficult to establish white clover within the grassland sward. So we have also conducted some small scale plot trials looking at alternative nitrogen-fixing legume species - bird's-foot trefoil and alsike clover are considered potential replacements for white clover and red clover in more marginal soils and harsher growing conditions.

However, by comparing and contrasting these legume treatments with and without rhizobia innoculant (bacteria that fix nitrogen after becoming established inside the roots of legumes), we found that in both inoculated legume treatments the biomass production was greater than the control perennial ryegrass with no legumes, whereas in both non-inoculated legume treatments the biomass yield was lower than the control.

Although the differences were not enough to be considered statistically significant, they do strongly suggest that rhizobial inoculation is important for the establishment and increasing the effectiveness of the legumes in promoting herbage growth. Hence, if such clover alternatives are to be sown then it is important that appropriate rhizobia are applied with the seed.

In addition to the experimental work we have also been working in partnership with colleagues in SAC Consulting who have organised a farmers grassland group which has met at the farms nine times over the last three years.

These meetings promote active discussion with the farmers, allowing us not only to disseminate the findings from our work but also, just as importantly, to receive feedback and constructive criticism from the farmers that can be incorporated into future grassland management work at Kirkton & Auchtertyre.

Davy McCracken
Head of SRUC's Hill & Mountain Research Centre