Maximising the Performance of Grass Leys

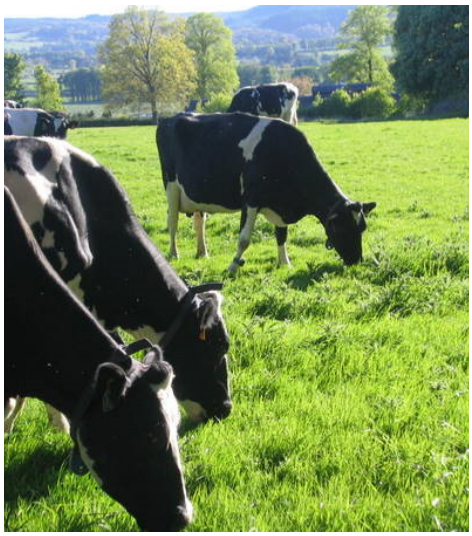
Practical Guide

Ploughing up grassland releases Nitrous Oxide (N_2O) and Carbon Dioxide (CO_2), both greenhouse gases implicated in climate change.

Maximising the performance of grass leys means grass is productive for longer and the time between reseeds can be extended.

Management of clover within a grass sward will reduce the need for bought in nitrogen fertiliser and help to make best use of nutrients on the farm.

Improving longevity of grassland on the farm will increase soil organic matter, lock up carbon, make best use of resources and help to reduce the farm carbon footprint.



This Practical Guide gives some tips to maintain long term production on grass leys.

See also the Practical Guide Establishing Grass Clover.

Benefiting the farm business

With a substantial part of Scotland's ploughable area laid down to grass we need to consider a management strategy which, after the grass sward has been established, maintains optimum production for its lifetime, irrespective of whether it is laid down as a permanent 10-15 year ley or a short term ley in an arable rotation.

Evidence from the Climate Change Focus Farms suggests the tips overleaf would allow the introduction of a structured grassland management policy on the farm, which will **maximise its production efficiency whilst maintaining the important role of grassland in carbon storage.**

Like any other crop, the yield and long term life of a grass sward is determined on the day it is sown. To ensure that there is a high yielding grass sward to manage, farmers should consider the guidelines included in the Practical Guide Establishing Grass Clover.

Farming for a Better Climate

There are five sets of Practical Guides covering :

Use energy and fuels efficiently

Develop renewable energy

Lock carbon into soils and vegetation

Optimise the application of fertilisers and manures

Optimise livestock management and the storage of manure and slurry

Find further information, including links to other Practical Guides and Case Studies, at

www.farmingforabetterclimate.org

Funded by the Scottish Government as part of their Climate Change Advisory Activity

Websites

www.farmingforabetterclimate.org

www.farmingfutures.org.uk

www.soilassociation.org

www.planet4farmers.co.uk

www.agrecalc.com

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Maximising the Performance of Grass Leys

Top tips:

1. Treat all perennial weeds (e.g. couch grass, docks, thistles and buttercup) with a glyphosate spray. If grass establishment follows cereal, a pre-harvest application of glyphosate to control grassy weeds will allow land to be ploughed for early spring sowing. In spring sown grass to grass reseeds allow 100-150mm (4-6 inches) of regrowth after grazing before applying the glyphosate in growthy weather conditions. If the old sward is not destroyed and sowing takes place directly after ploughing, cultivation brings divots from the old sward back to the surface where they readily re-establish. In older permanent grassland this can lead to a reversion back to a predominantly natural grass sward after three years.
2. Seek specialist advice on post establishment weed control (see box)
3. If possible the reseed should be grazed in the year following establishment. Close grazing encourages both tillering in the ryegrass and clover development. Grazing the sward down before going into the winter will help to avoid winter kill. Ideally reseeds should be lightly rotationally grazed by sheep over the winter.
4. Manage the reseed to establish 30% clover in the sward and fix 125–150 kg/ha (100-120 unit/acre) of atmospheric nitrogen; **this could cut future inorganic nitrogen costs by £136 to £160/ha** (**£55-£65/ acre**) at current prices. If you have followed the reseeding and management tips, expect to be at this stage by the spring following sowing. The final tips are targeted to maintain the production of organic nitrogen from clover, **saving £1,500 to £2,200/ha** (**£600-£900/ acre**) in purchased nitrogen over the next 10/15 years.
5. Take advice from a grassland specialist on setting target stocking rates, which take account of land capability limitations, soil type and the production requirements of the farm.
6. Assess and fix drainage and soil compaction issues annually .
7. Reseeded grass should be cut and grazed in alternate years. This will ensure that a tight bottom is maintained in the sward. Where possible, feed stock on fields scheduled for reseeding the next year.
8. As a rule of thumb, for each silage or hay cut, apply potash to one half to two thirds of the level of nitrogen applied. Potash offtake in silage should be replaced after each cut using slurry and adjustments made for yield and soil nutrient status. *FAS Technical Note (TN726): Fertiliser Recommendation for Grassland* provides more details.
9. Feeding home grown forage to stock on rough ground is the best way to transfer fertility from the best to the worst parts of the farm.
10. Soil testing on a three to four year basis will identify soil nutrient status.

Post Establishment Weed Control

Annual Weeds

Weed burdens of moderate populations of non winter hardy annuals such as dead nettle and fat hen or open growing weeds such as field pansy and knotgrass can be taken out by grazing stock. Chickweed is a winter hardy annual more commonly found when establishing short term leys in arable rotations. Where not controlled by grazing, specific control measures must be operated to control weeds without taking out the clover.

Perennial Weeds

Where there was a population of docks or spear thistles in the old sward there will be a seedling population in the reseed. Specialist advice can allow these to be controlled as seedlings with clover-safe herbicide mixes.

Weeds are more effectively controlled as seedlings so it is important to treat them where possible in the first year of establishment.