Establishing a Grass Clover Sward

Practical Guide

Both fertiliser manufacture and its use release greenhouse gases implicated in climate change.

Using a grass clover sward can help to reduce nitrogen applications, making full use of nutrients on the farm whilst maintaining farm profitability. Better targeted nitrogen applications can help to improve the farm carbon footprint and reduce diffuse pollution risks.

These top tips could help you establish grass swards which have the capacity to **improve production efficiency whilst minimising the long term cost of purchased inorganic nitrogen**.

This Practical Guide gives tips to help you establish a grass clover sward.

Benefiting the farm business

The single consistent message from the climate change focus farm programme is that **efficient farming systems cut the quantity of greenhouse gases emitted per unit of food produced**. In grass based systems, the production efficiency is geared to the capacity of the grass to maximise livestock production.

Addition of clover to grass swards can reduce the need for inorganic nitrogen applications, so saving money for the farm business whilst maintaining production levels and reducing the farm carbon footprint.

P&K requirements for Grass Clover Establishment

Reseeding is an opportunity to get your soil analysed and correct any P& K imbalances and to make sure you are on target for pH. The table below provides nutrient recommendations for grass clover establishment (kg/ha) based on soil analysis results:

P status			K status		
Low	Mod	High	Low	Mod	High
110	70	50	90	70	40

Phosphate should be applied directly but spring application of K should be restricted to a maximum of 80 kg/ha to avoid luxury uptake. Where undersown, use the cereal recommendation plus an extra 40 kg/ha of P&K.

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.sac.ac.uk/climatechange
www.farmingfutures.org.uk
www.soilassociation.org
www.planet4farmers.co.uk
www.agrecalc.com

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Top tips for establishing a grass clover sward

1. Direct reseed as opposed to under-sowing with a cereal crop.
2. For grass and clover aim for a pH of 6. Where cereals are grown in the rotation lime to an average of 6.2.
3. Allow for 4-6" of regrowth on an old grass sward or the cereal stubble to green up before applying a glyphosate (*Roundup* spray). Plough 10-14 days after the spray is applied.
4. Apply lime and straight phosphate to the ploughing and cultivate to produce a fine seedbed in good soil and weather conditions.
5. Roll before sowing to firm seedbed and ensure good contact between grass seed and the soil.
6. Based on soil analysis results, broadcast any additional fertilisers. If soil is at the high end of moderate, or has a high phosphate and potash status, there may be no need to apply compound fertiliser at sowing if slurry, manure, compost or digestate has been spread.
7. Sow the grass and clover mix and roll.
8. Once the grass has started to tiller and the clover has one to two trifoliate leaves, assess the weed population. If no problem weeds are visible, leave until grass can be grazed off by stock, preferably sheep. Where problem weeds are present, seek the opinion of a grass/clover specialist before using a herbicide. Examples of problem weeds are seedling docks, thistles and chickweed.
9. Graze grass in its first year and then use an alternative cutting and grazing system in fields which are not too steep to cut.
10. Where under-sowing with a cereal crop is the only option, additional management guidelines should be considered (see box opposite).

Maximise production post reseeding

- Match stocking rate to production potential.
- Cut at 50% ear emergence for young stock and later for suckler cows. Its easier to manage where grass is conserved as bale silage.
- Cut and graze in alternate years.
- As a rule of thumb, apply half to two thirds as much potash as you apply of nitrogen to cut grass. Remember a grass/clover silage producing 150 kg/ha (120 units/acre) of nitrogen still needs at least 75 kg/ha potash to replace crop offtake. A nutrient budget will help you plan nutrient additions and maximise both production and profit.

Under-sowing with a Cereal Crop

- Select an early maturing short strawed spring barley variety. Oats tend to be long strawed, competitive and make it more difficult for grass and clover to establish.
- Select a good weather window which will allow grass and cereal to be sown on the same day.
- Consider reducing the cereal seed rate.
- Roll after sowing the cereal crop.
- Broadcast an additional 40 kg/ha P and K fertiliser in addition to that required for the cereal crop.
- Drill grass/clover seed.
- Roll.
- Seek expert advice on weed control.
- Consider taking the cereal crop as an arable silage.

Nutrient Budgeting; PLANET Scotland

PLANET Scotland is a free computer tool that can help you plan and record field level nutrient use on your farm.

It can also be used to demonstrate compliance with Nitrate Vulnerable Zone (NVZ) and Diffuse Pollution Generable Binding Rules (DP GBR) measures, keeping you in pocket and on the right side of environmental regulations.