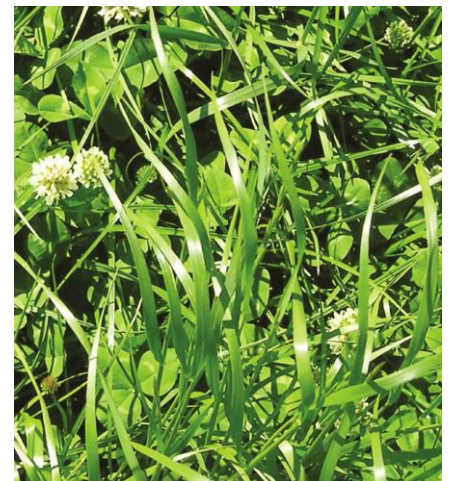


A decorative graphic consisting of several thin, white, wavy lines that flow across the top of the slide, transitioning from a dark teal on the left to a light green on the right.

Improving pasture for Better Returns

Introduction

- Grass is the most important, yet often overlooked, resource for livestock production
- Well-managed grassland provides the most economic feed throughout the year
- Inadequate crop nutrition, soil compaction, weed infestation and many other factors result in reduced performance



What is the potential?

The potential of pasture depends on:

- Soil structure and type
- Soil fertility
- Biodiversity within the soil
- A sward with production grasses and few weeds
- Well-managed grazing, silage or hay systems

Improved pasture in most of the UK is capable of growing over 12 tonnes of dry matter per hectare (t DM/ha), but the current average is around 8t DM/ha.

What is the potential?

Grass Growth Class (GGC)

Is the ability of grass to respond to nitrogen (N) depending on soil type and rainfall

The greater the GGC → greater nitrogen efficiency → better dry matter yield response

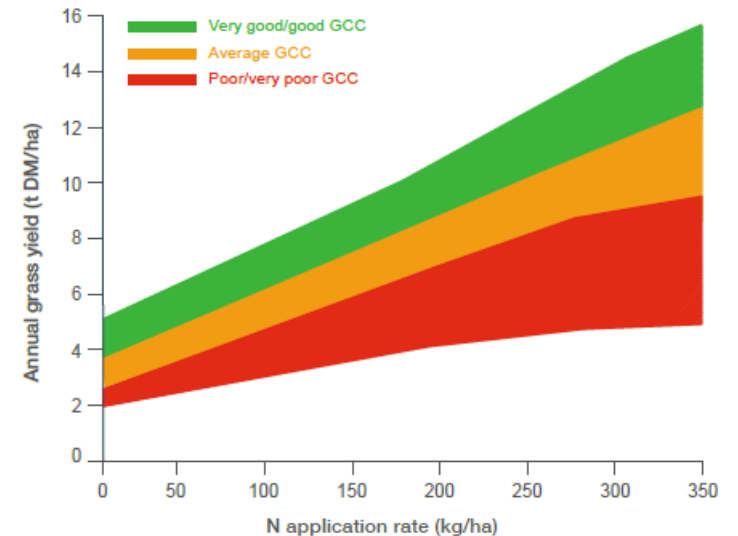


Figure 1. Indicative grass dry matter yield by grass growth class (GGC)
Source: AHDB Nutrient Management Guide (RB209), Section 3

What is the potential?



Utilisation - a measure of what has been eaten or conserved compared to what has been grown

- Good utilisation – when fields are grazed at the right time, to the right height with the right amount of stock
- Utilisation can be as low as 50%
- AHDB trials have shown that utilisation can be as high as 80% in well managed grassland

Good grassland starts with soil



- Healthy, fertile soil is a dynamic living system with physical, chemical and biological properties that promote plant and animal health
- Healthy soils have a mixture of large and small air spaces – important for water, air and nutrient movement, root growth and soil biology
- High stocking densities and machinery can cause compaction and eliminate these air spaces

Learn the four steps to assess soil structure:

1. Surface assessment
2. Soil extraction
3. Soil assessment
4. Soil scoring

Impact of soil nutrients

- If essential nutrients are in short supply, plant health and yield will be reduced
- Soil testing is crucial to establish the nutrient requirements

Tips for soil testing:

- Good practice is every 3-5 years
- Ideally between Oct-March
- 25 samples from across a field
- 7.5cm deep in grassland
- 15cm deep if ground is going to be ploughed
- Two months after the last manure or fertilizer application



Impact of soil nutrients

Nutrient management plan

The results of a soil test should be used to produce a nutrient management plan

This should be provided by a FACTS-accredited advisor



Figure 2. Factors to take into consideration when calculating fertiliser requirement

Impact of soil nutrients

pH

- The main driver for grassland productivity
- Ideal pH is 6.0-6.5

Phosphate and potash

- Phosphate is essential for root development
- Potash is essential for nutrient transportation around the plant
- Presented as an indices from soil tests
- Phosphate target is 2
- Potash target is -2

Weed control



- Effective weed control by cultural or chemical means is important in grassland management
- Controlling weeds improves forage yields, quality and longevity
- Assess 50 x 50cm squares around the field. If more than 10% is weeds then grass production is being compromised

Weeds:

- Buttercups
- Thistles
- Rushes
- Ragwort
- Docks
- Nettles
- Chickweed

Weed control



Many grassland weedkillers are detected in water sources. There are legislations which must be adhered to.

Tips to avoid weedkillers reaching watercourses:

- Use currently approved products recommended by an agronomist
- Keep weedkillers in a locked store
- Use trained operators with current qualifications
- Regularly checking and testing spray equipment
- Filling in areas away from drains and watercourses
- Clearing up spills immediately
- Spray when soil and weather conditions are suitable, ie no risk of drift and soils not too wet
- Leave buffer strips between watercourses and sprayed areas

Reseeding



Benefits of a reseed:

- Improves pasture yield and quality, driving higher farm output and reducing bought-in feed requirements
- Addresses soil compaction problems
- Introduces improved grass genetics with improved productivity, durability and disease resistance
- Reduces weed burden
- Increases pasture response to fertiliser, through using more nitrogen-efficient varieties
- Introduces clover into the sward

The decision to reseed

Assessing sward condition

- The percentage of ryegrass (or other sown species) is a better indicator of a need for reseed than age
- If a ley is not very old, consider why it has deteriorated before simply reseeding e.g. lime may be needed
- Consider reseeding when sown species is below 50%

Is a reseed needed?

Research has shown that increasing the proportion of the farm reseeded each year increases the amount of grass grown and utilised on the forage platform, resulting in increased farm net profit on Irish dairy farms (see Figure 6).

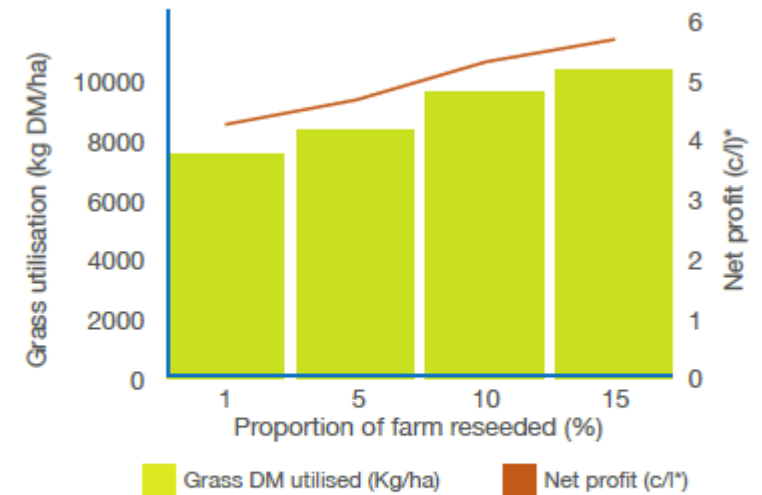


Figure 6. Results from research work on Irish dairy farms on the benefit of reseeding on net profit
*cents/litre

Preparing for a reseed

Six months before reseeding check the following:

- Make sure the field drainage system is working and fit for purpose
- Soil test the field
- Assess the soil structure – if the soil is score 4 or 5 (poor) ploughing would be recommended

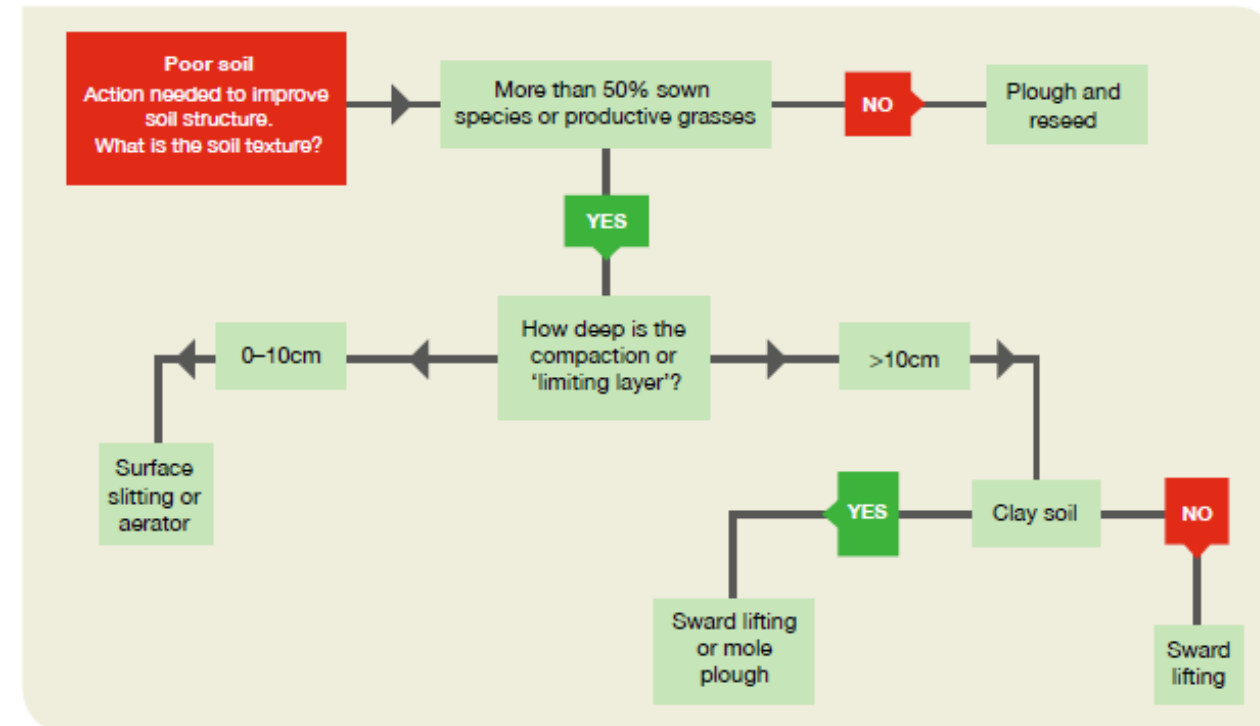


Figure 5. Decision tree for soils scoring 4 and 5 (from *Healthy grassland soils pocketbook*)

Grass mixtures



Most reseeds are a mixture of diploid and tetraploid perennial ryegrasses and white clover. Other types of ryegrass and species such as clover and cocksfoot may have a role to play in certain situations.

Mixtures are commonly sown for 3 reasons:

- To minimize the risk of a crop of seed failing
- To ensure sward quality throughout the grazing system
- To achieve a balance of desirable traits

Mixtures don't necessarily yield more but they can balance to your needs. Work with your seed supplier to help determine the mixture you need.

Recommended grass and clover lists



The RGCL should be used to complete the three steps when selecting grass varieties:

- **Step 1 – Is it on the lists?**

The list consists of the best-performing varieties so choose from the lists

- **Step 2 – What will the sward be used for?**

Some varieties will perform better for silage rather grazing and vice versa

- **Step 3 – Choose which traits are most important for the farm**

Varieties are tested for traits such as disease resistance and seasonal growth so select based on which traits are important to your farm

Alternative species



- **Chicory** - chicory helps to draw essential minerals from the soil for grazing livestock. Improved chicory varieties, including perennial varieties lasting over two years, are now available
- **Plantain** - narrow-leaf plantain, or ribgrass, is a perennial herb with a broad distribution, used as a stand-alone crop and as part of a sward mixture in the native grasslands of the temperate world.
- **Sainfoin** - sainfoin is a silage or hay crop that can also be grazed. It's drought-resistant and needs no nitrogen and little phosphate fertiliser
- **Lucerne** - lucerne is a high-yielding legume, providing a useful source of protein for feeding to cattle and sheep
- **Forage vetches** - vetches are from the legume family. Fast-establishing and continue to grow and fix nitrogen at lower temperatures than clovers, so are useful when sown in autumn

Tips for first season



- **Assessment post-drilling** – monitor new reseeds so problems can be resolved quickly
- **Tiller development** – assess tiller development to ensure plants are developing properly
- **Sward management** – the tillering process in new swards is strongly aided by grazing
- **First grazing** - graze the new reseed as soon as it is not possible to pull the plants out of the ground by hand
- **Following grazings** - aim to graze autumn reseeds before the first winter to encourage tillering

Pests and diseases

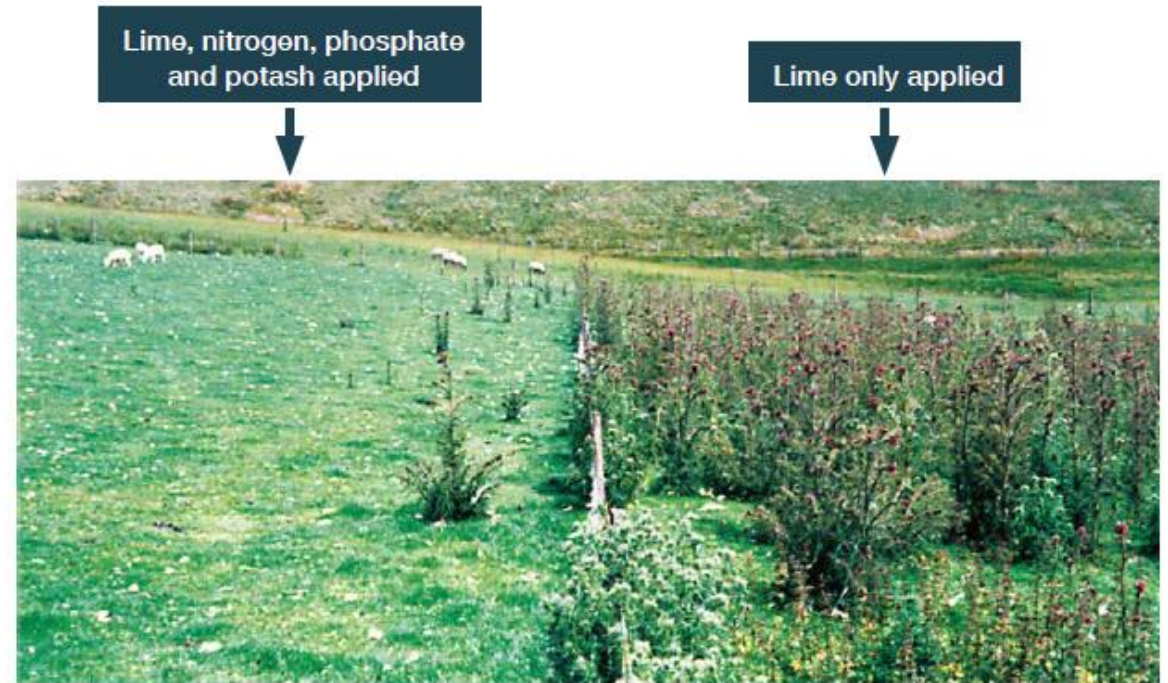


Understand the activity and symptoms of pests and diseases such as those below and how to best control them:

- Leatherjackets
- Slugs
- Frit fly
- Chafers
- Sitona weevil
- Barley yellow dwarf virus
- Ryegrass mosaic virus
- Crown rust

Focus on permanent pasture

- Permanent pasture needs managing as much as a newly sown ley
- Soil nutrient shortfalls are common with permanent pasture so test for and address any deficits
- Soils can become compacted over the years to reduce compaction through methods such as aeration and ensure drainage is sufficient.
- A good-quality, permanent sward should consist of at least 50 per cent ryegrass and 20 per cent white clover



Hills and uplands



There are different and more difficult challenges for those relying on grass in hill and upland areas.

- **Appropriate grasses** – winter hardiness and ability to grow at low temperatures are key requirements of grass in upland areas
- **Reseeding** – introduce new seeds in late Spring or early Summer when it is warmer and adequate soil moisture
- **Fertiliser applications** – a spring application of nitrogen fertiliser will kick-start spring growth
- **Invest in soil inputs** – understand what your soil needs as research has shown it extends grazing seasons and allows higher stocking densities