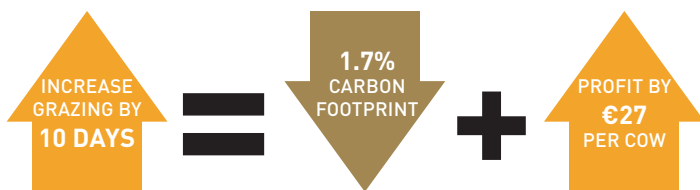


Grass is the most important feed for livestock. It provides 70 – 80% of cattle's feed requirements and over 90% of the feed requirement of sheep.

Here are some tips to help you get the most from your grassland.

Better grazing management can increase farm profitability by €250 – €350/ha



Grass budgeting is essential to ensure the efficient conversion of grazed grass into milk, thereby maximising profitability.

The main ways to increase the proportion of grass in the animal diet are:

- 1. Extend the grazing season into early spring and late autumn.**
This can be achieved by implementing grazing management practices such as timely closing of paddocks in autumn for early spring grazing, where weather allows.
- 2. Where possible match the herd calving pattern**
Begin calving when grass starts growing – this results in most cows calving between 1st February and 10th March. Target an opening farm cover of 900 – 1000 kg DM/ha.
- 3. Match stocking rate to the grass growth potential of the farm**
For example, a cow consumes 5t grass DM. If a farm is growing 12 t DM/ha it can be stocked at 2.4 cows/ha ($12 \div 5 = 2.4$).
- 4. Ensure Soil Fertility is optimised**
Test soil (every 3-5 years) to measure changes in soil nutrients and adjust fertiliser application accordingly. Implement nutrient management plan based on results of soil test.

Teagasc Nutrient Management Planning (NMP) Online tool allows agri-professionals to produce high quality nutrient management plans for farmers by combining their expert knowledge of soil fertility with a range of information sources.

See Teagasc NMP online <https://nmp.teagasc.ie>

- 5. Implement a Spring re-seeding programme**
A Spring re-seeding programme is necessary to maximise sward productivity. This productivity will allow for an increase in grass quality, stocking rates, animal output and more responsiveness to fertilisers.
- 6. Weekly farm grass cover measurement and seasonal grass budgeting**
Budgeting is an important planning tool to identify periods of potential grass surpluses or shortages.
- 7. Ensure that farm infrastructure is sufficient**
Ensure that infrastructure including roadways and paddocks are maintained sufficiently to fully utilise grass grown, especially during periods of wet weather to allow for an extended grazing period.
- 8. Supplement diet**
Supplement with concentrate or high-quality baled silage when grass is in short supply.
- 9. On-off Grazing**
Use on-off grazing during periods of wet weather to keep grass in the cows' diet.

Maximise grass production and profitability throughout the year.



Spring

Simple Rules:

- Turnout in mid-February.
- 30% of farm grazed by 1st March.
- 60% of farm grazed by 17th March.
- 100% of farm grazed by first week in April.
- These dates should be a week later on heavier soil types or slow grass growing farms.
- Graze paddocks to 3.5 cm during the first rotation to promote high sward quality in subsequent rotations.

Each extra day at grass in spring is worth €2.70/cow/day.



Mid-season

During mid-season the farm should be walked at least once per week and the farm cover (amount of grass on the farm) measured.

Target pre-grazing yields of 1300 – 1600 kg DM/ha. Target post-grazing height during the main grazing season of 4 – 4.5 cm.

- If there is surplus grass on the farm, corrective action needs to be taken, such as removing a paddock as baled silage.
- If there is not enough grass on the farm, animals may need to be supplemented (silage/concentrate).
- Rotation length should be 18 – 21 days.
- Keep topping to a minimum as it delays re-growth of pasture. One round of topping to <4.5cm should be enough and should be completed from mid-May to late June.



Maintaining the correct pre-grazing yield and post-grazing height during the main grazing season generates an extra €150/ha in milk receipts.



Autumn

Every extra tonne of grass utilised this time of year is worth €181/ha to a dairy farm and €105/ha to a dry stock farm. A 60:40 autumn rotation plan helps extend the grazing season into late autumn. Start increasing rotation length by 1 day per week from the 1st of August. Rotation length should be >35 days from mid-September

Simple Rules:

- Start closing 10th October.
- 60% of the farm should be closed by 1st week of November.
- Remaining 40% should be closed by 1st of December.
- Closing should be a week to 10 days earlier on heavier soil types.

Autumn closing management has the largest effect on spring grass supply.



Winter

Simple Rules:

- 60% of the farm should be closed by first week of November
- Remaining 40% should be closed by 1st December
- Closing should be a week to 10 days earlier on heavier soil types

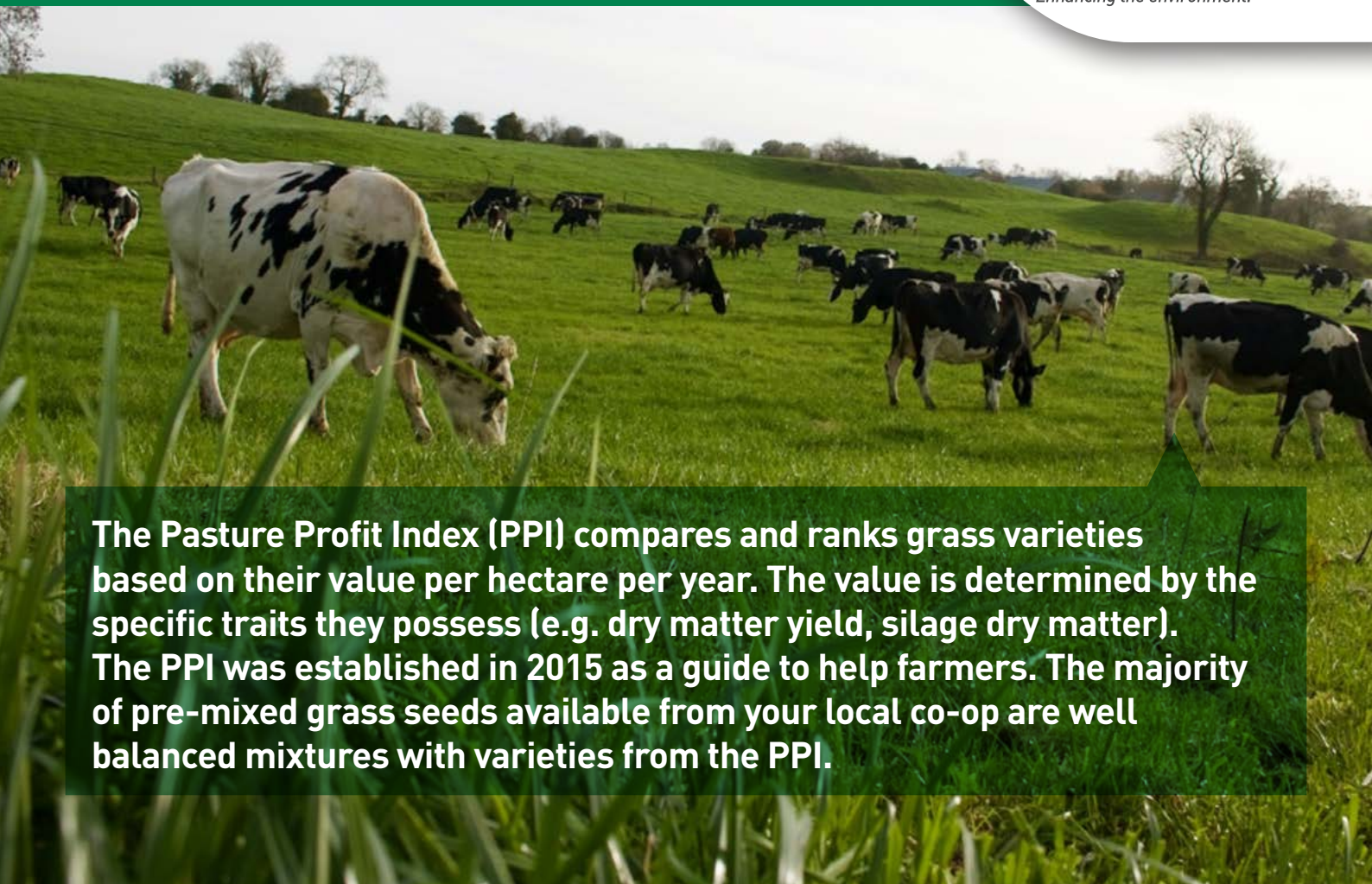
Once a paddock is closed it should not be re-grazed as this will reduce spring grass supply. Each one-day delay in closing (from September 25th) results in 16 kg DM/ha reduced herbage mass in spring. Close some drier paddocks earlier to facilitate early spring grazing. Graze paddocks to 3.5 – 4 cm during the final grazing rotation to encourage winter tillering. Closing cover target is 650 kg DM/ha for farms stocked at 2.5 cows/ha in early December.

During wet weather

Where soil conditions allow, use on-off grazing

- Allow cows two 3 hour grazing periods after each milking.
- After each three-hour period move cows from the paddock to a stand-off area (e.g. a shed).
- Silage supplementation is not necessary.
- Ensure full allowance of grass is offered during these periods as cows adjust their grazing behaviour to achieve full intake.

Be flexible – graze lower grass covers (shorter grass) in wet weather. Ensure a good network of roadways to maximise pasture access and minimise poaching damage. Back fence areas that have been grazed to avoid poaching damage. Poaching paddocks can reduce grass growth throughout the year, particularly on heavy farms.



The Pasture Profit Index (PPI) compares and ranks grass varieties based on their value per hectare per year. The value is determined by the specific traits they possess (e.g. dry matter yield, silage dry matter). The PPI was established in 2015 as a guide to help farmers. The majority of pre-mixed grass seeds available from your local co-op are well balanced mixtures with varieties from the PPI.

Reseeding

Perennial Ryegrass

Achieving high levels of grass production and animal performance from swards which do not have a high proportion of perennial ryegrass is very difficult.

High perennial ryegrass swards can produce 3 t DM/ha more than swards with low levels of perennial ryegrass. Swards with low levels of perennial ryegrass are not as responsive to nitrogen. Greater spring growth is achieved with high perennial ryegrass swards. Pastures with <65% perennial ryegrass should be reseeded. Such swards will likely be the lowest performing paddocks based on your annual tonnage report from Pasturebase Ireland.

Spring is the best time to reseed

- A spring reseed can produce as much grass in its year of establishment as an old permanent pasture.
- Establishing clover is more reliable in a spring reseed than autumn as soil temperatures are more stable.
- Greater chance of more suitable weather and 'travelling' conditions to apply a post emergence spray which is essential for weed control.

Guidelines when choosing a seed mixture:

1. Choose a grass mix that has good spring and autumn production, as most mixes have similar mid-season productivities.
2. Choose varieties with a narrow range in heading dates (7-10 days).
3. Choose a grass mix that provides adequate ground cover, this is very important for wetter soils especially.

Choosing the right varieties:

Grazing

- Choose tetraploid varieties combined with high digestibility diploid varieties (use the quality sub-index of the PPI).
- Tetraploid varieties have the highest grazing efficiency due to their large leaf area, lower tiller density and high quality compared to diploids.
- 50% tetraploid is sufficient in a seed mix, higher levels of tetraploid can be used, but sward management should be adjusted to protect it from damage during the shoulder grazing periods.
- It is better to use a small range in heading dates (e.g. 7-10 days), a wider range in heading dates will be reflected in a longer heading period.



A well-established white clover pasture will deliver a 10% reduction in carbon footprint (3% due to increased milk yield; 7% due to reduction in chemical N fertilisation)

Silage

- The silage sub-index within the PPI should inform variety selection decisions.
- Intermediate heading varieties should be included in the seed mixes for intensive silage swards.
- Tetraploid varieties should make up about one third of silage mixes.
- For swards cut once a year and then grazed, the amount of intermediate can be reduced, and late heading cultivars can be used.
- Low yielding late diploids should be avoided on the land targeted for continuous silage harvests.
- Whatever the varieties in intensive silage systems, persistency will become an issue if high silage yields are harvested to low cutting heights.

Clover

Reseeding offers the ideal opportunity to consider introducing white clover in the sward. Clover should be sown at rate of 4 - 5 kg per hectare to create a sward with 15% clover.

- Together with extended grazing, clover is one of the higher impact elements of the Marginal Abatement Cost Curve (MACC), the greenhouse gas mitigation plan developed for farming by Teagasc, and it can help with improving N efficiency.

- In grazing swards small and medium leaf clover varieties are recommended in combination with late heading perennial ryegrass varieties as they are more persistent than large leaf varieties.
- Care must be taken with the larger leaved clovers as their aggressive growth habit dominates swards over time. Varieties with high yield potential and good grazing persistence at both high and low nitrogen levels should be used.

Farmers operating under nitrates derogation must include a minimum of 1.5 kg/ha of clover seed when reseeding paddocks

Management of swards after reseeding

- Best time to control docks and other weeds is after reseeding.
- Apply post-emergence spray 6 weeks after establishment.
- Graze swards as soon as the new grass plants roots are strong enough to withstand grazing (i.e. can not be pulled out of sward).
- Aim to graze reseeded pasture after 60 days (lower pasture cover of 800 – 1000 kg DM/ha).
- **Frequent grazing of light covers (<1400 kg DM/ha) during first year after establishment will help the sward to tiller and reduce opportunity for weed establishment.**
- Check reseeded for slug/leatherjacket attack.
- If possible, avoid cutting silage on the reseed during the first year.

Acknowledgments

We would like to thank Teagasc Moorepark Animal & Grassland Research and Innovation Centre and PastureBase Ireland for their help and contributions to this guidance note. Special thanks to Tomas Tubritt Teagasc Moorepark for his input.