

217.01 GRAZING AND GRASS QUALITY

Key to maximising meat and milk production from grass is to provide high quality herbage for the grazing animal. Without careful management, grass quality can decline quickly which can impact not only on animal performance but the health and longevity of the ley.

WHAT IS GRASS QUALITY?

Grass quality is complex; different producers have different priorities for their 'high quality sward'. Optimising quality is a balance between maintaining grass nutritional qualities while keeping sward characteristics that support high intakes.

NUTRITIONAL QUALITY

Digestibility (D Value) and Energy are closely linked to vegetative state – young, leafy swards have higher D and ME levels than those that have started to head or contain a lot of dead material. The rate of decline increases sharply once heading starts – losing 3% digestibility in a week. Ryegrass, with an average D value of 74, has a far higher average digestibility than other species; eg Yorkshire fog at 54. A drop of 1 unit of D in an animal's diet gives a drop of 5% in animal performance.

Protein. Protein levels are linked to grass growth stage and are affected by soil nutrition. Levels peak in early spring at above 30%. Protein formation depends on the plants ability to take up nitrogen from the soil – so can be influenced by nitrogen applications but also by potash and sulphur levels and soil pH. Animals struggle to capture high levels of protein- so rich, leafy grass can be wasteful and have negative impacts on rumen health.

Dry Matter Content (DM). Of all the grass quality traits, dry matter is the most variable and the least controllable. Low dry matters, triggered by wet weather reduce animal intakes. Once levels fall below around 12% it is difficult for animals to consume enough dry matter to meet their energy needs – so be prepared to supplement.

SWARD QUALITIES

Sward Density. A very tight sward with a high density of tillers helps to maximise animal intake and also prevent 'muddying' of the grass.

Sward Height/Grass Cover. Targets for the amount of grass in front of the grazing animal will depend on the type of animal. High covers/heights will maximise animal intake but may compromise sward density and lead to high levels of wastage and rejection. (See our factsheet on measuring swards).

Weed Content. The percentage of non sown species in a sward affects its nutritional qualities and palatability. Weeds like creeping thistle also reduce animal intake and increase rejection.

Contamination and Rejection. Slurry, soil and dung/urine patches all lead to areas of the sward being rejected by the grazing animal so reducing potential intakes. Rejected areas will then tend to become stemmy and lose quality. Rejection areas quickly accumulate and affect later grazing. Grass diseases like crown rust in late summer/autumn can also reduce animal intakes.

Clean/Safe Grazing. Low worm burden pastures are particularly important to sheep producers. Plan grazing to minimise burdens to the most vulnerable animals.

MANAGEMENT OPTIONS TO MAXIMISE GRASS QUALITY

Sward Composition - Maintaining a high content of sown species in the sward (ryegrass, Timothy and clover) maximises nutritional value. Good soil structure and soil chemistry encourage ryegrass to tiller rapidly and fill in any gaps in the sward – prevent the ingress of weeds. Regular reseeding and/or oversowing will help to maintain quality across the farm.

Variety Selection - When selecting varieties for new leys make sure they suit your system. For example early heading varieties may provide good early season grass but often lose quality through the summer. NIAB lists of recommended varieties provide information on digestibility of different varieties – select those which provide quality as well as yield.

Extract from NIAB Recommended list of Late Heading Diploid Perennial Ryegrasses

Variety	Lasso	Pastour	AberAvon	AberZest	Cancan	Portstewart
Grazing D value	66.9	68.5	70.8	69.2	68.6	66.7
Grazing Yield (as % of control)	96	103	107	104	104	100

Use of White Clover - Having a significant white clover content (average 30%) helps to increase the protein content of the sward as well as improve mineral status. Animal intakes are higher on clover based swards than grass only swards.

Sward Assessment - Measuring swards provides valuable information to help maintain quality. Setting suitable targets for covers or surface heights at both the start and finish of grazing keeps swards fresh and maintains good intakes. When estimating covers, remember the effects of poor weather on grass dry matter content. Chemical analysis of grass at key time times of the year can also provide useful information to help manage grass quality, make decisions about improving or replacing leys and when to implement supplementary feeding.

Topping - Top to remove stemmy material and encourage tillering. It is crucial to top tightly (below target grazing height). Topping immediately pre-grazing can be used to increase dry matter % and increase animal intakes – although is best achieved with leafy material.

Grazing Management - Operating a leader-follower system to reduce rejection areas and graze a pasture down can be very effective at maintaining quality. It is important that stocking density is sufficient to complete the operation in a couple of days so that the ley can come back into the grazing rotation as quickly as possible. Mixed grazing with sheep and cattle has been proven to improve sward quality, through reducing rejection areas and by promoting favourable conditions for white clover growth.

Use of Grass Harrows - Use grass harrows to remove dead material and poorer quality grass species like creeping bent. They can also be used after manure spreading to help break up any lumps and produce a more even coverage and speed up decomposition. Beware overusing the harrows and making swards too open and prone to poaching/muddying.

Slurry Injection - The surface application of dirty water and slurry will taint the sward for several weeks, stopping efficient grazing and limiting intakes. IGER Research has shown that grazing behaviour can still be significantly affected for up to 8 weeks by surface applications. However using injectors or band spreaders can reduce negative effects to around three weeks.

FURTHER INFORMATION:

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Other Factsheets:

303.01 Measuring Sward Surface Heights.

The Grassland Development Centre, based in IGER, is managed by the Welsh Assembly Government as part of Farming Connect.

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