

**FACT SHEET**

February 2013

# Grazing Systems



**FARMING**  
connect  
cyswllt  
**FFERMIO**



Cranfa Amaethyddol Ewrop ar gyfer  
Datblygu Gwledig Ewrop yn Buddsoddi  
mewn Ardaloesdi Gwledig  
The European Agricultural  
Fund for Rural Development  
Europe Investing in Rural Areas

 **menter  
a busnes**



Llywodraeth Cymru  
Welsh Government

## Grazing Systems

Grazed grass is the cheapest feed for ruminant livestock and when well managed can supply more than 90% of the energy requirements for sheep and beef cattle and 70% for dairy cows.

Good grazing management is based on keeping the ryegrass plant leafy and actively growing whilst matching grass supply to livestock needs. This delivers many benefits including:

- Optimal use of grass and increased livestock output per hectare (ha)
- Swards dominated by sown species and fewer secondary grasses
- Improved self-sufficiency: reduced reliance on bought in supplementary feed
- Better use of fertilisers and manures
- Lower farm carbon footprint
- Improved animal health

Across Wales up to 50% of grazed grass is wasted because it is not grazed at the right time. Grazing too low or letting swards grow too tall reduces production, livestock output per ha and enterprise profitability.



*18 month old grass ley, showing signs of poor grazing management*

Good grazing systems match livestock needs to grass growth. Because grass growth and stock needs vary, measuring grass and adjusting the grazing area and/or stock numbers and supplementary feed throughout the season is essential for efficient grazing management.

The two basic systems used are continuous or rotational grazing. Although the potential output for swards under each system remains the subject of much debate, research suggests that managed to their respective guidelines, continuous or rotational grazing gives similar output except at very high stocking rates.

Choice of grazing system should be based on individual preference and will be affected by practical and financial considerations such as farm layout, field size, parasite control and labour availability. Many farms adopt a combination of systems, for example, continuous grazing at lambing and rotational grazing later in the season. Whichever system is adopted, the key to success is attention to detail; regular measuring and responding to grass growth to provide the right amount of grass to meet livestock needs.

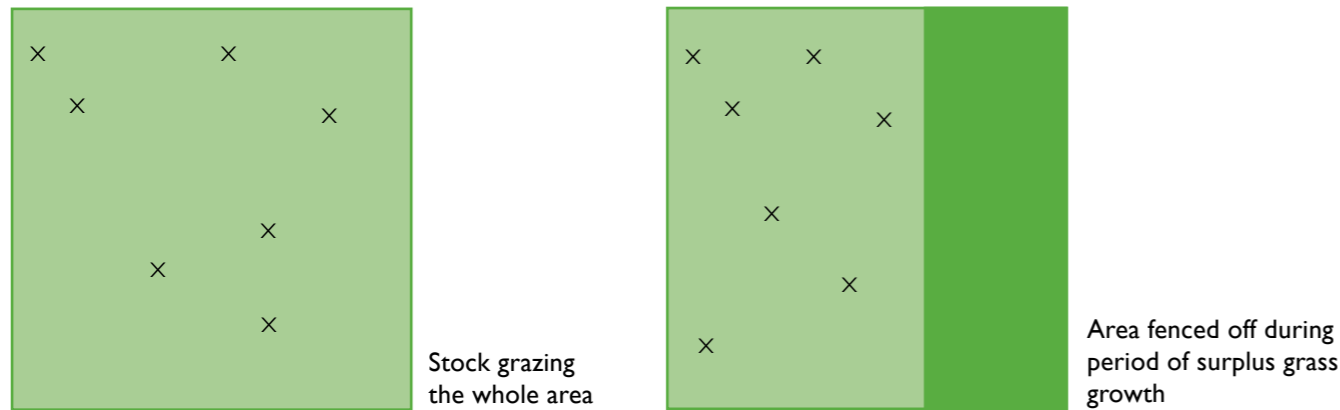
Information on measuring swards can be found in Farming Connect fact sheet 'Improving Grazing Management: Measure to Manage'.



*Westerwolds ryegrass grown for high quality deferred grazing*

# Continuous grazing

Livestock have access to a large area or 2 or 3 smaller areas for most of the grazing season. The area and stock numbers are not fixed. Swards are monitored and when growth exceeds the target guidelines, up to 33% of the area is shut up either for silage or to be re-introduced to the grazing area if grass supply falls.



## Strengths

- Low cost: Saves on fencing and water
- Can reduce poaching as stock spread out
- Increases sward density and clover content
- Better control of broadleaved weeds such as docks
- Can produce high individual animal performance and live-weight gains per ha
- More suitable for lambing as less mis-mothering occurs
- Allows grazing and cutting areas to be alternated which benefits long term persistency of the sward
- Less variation in seasonal grass growth

## Weaknesses

- Careful measurement needed to assess changes in sward growth and adjust area and/or stock numbers
- Up to 33% of fields need to be suitable for cutting or strip grazing
- May produce lower output/ha at **very** high stocking rates
- Stock may preferentially graze an area and graze re-growth before ideal growth stage
- More difficult to produce sward budgets
- May need temporary electric fencing to reduce area
- Takes more time to check or gather livestock
- Less suited to certain species e.g. red clover or chicory

# Mixed species grazing

Different classes of livestock with different grazing needs, for example, cattle and sheep are grazed together on the same area. Mixed species grazing is best suited to continuous grazing systems.

## Strengths

- Sward quality and utilisation improves
- May improve parasite control: dilution of host specific parasites
- White clover percentage may increase improving nitrogen fixation and feed value of sward

## Weaknesses

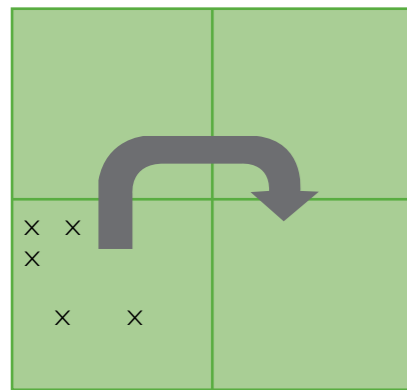
- One class of livestock may bully the other
- Sheep have different fencing needs to cattle
- Difficult to provide appropriate type and amount of supplementary feed for each class of stock



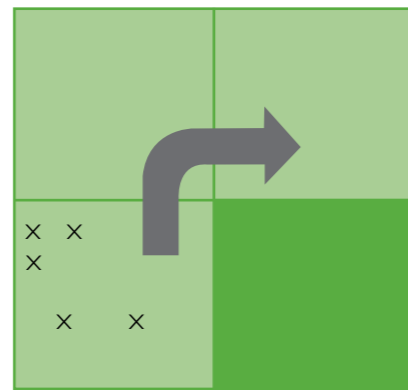
Mixed Grazing: cattle and sheep are grazed on the same area

# Rotational grazing

Fields are split into a number of paddocks using electric fences and stock graze them in turn for anything between 0.5 to 7 days. Speed of rotation is based on monitoring sward growth. Paddocks are grazed when the sward reaches the pre-graze target measurement and stock are removed when the sward is grazed down to post graze target measurement. The paddock is then allowed to rest and re-grow. The time this takes varies depending on the time of year and speed of re-growth and can range from 14 days in spring to over 100 days in winter. Paddocks are taken out of the grazing area when growth exceeds livestock needs and cut for silage.



Stock graze one paddock before moving to the next



Stock graze one paddock before moving; one paddock fenced off during period of surplus grass growth

## Strengths

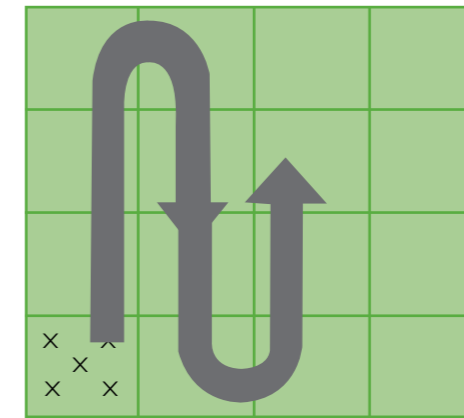
- Easier to see changes in grass availability in each paddock
- Can produce higher yields/ha under **very** high stocking rates
- Grass budgets can be calculated more easily to see if demand is outstripping supply
- May produce higher output/ha at very high stocking rates
- Grazing is followed by a rest period which reduces risk of uneven grazing
- Smaller field for checking livestock
- Animal manures spread more evenly over field
- Prevents livestock grazing plant re-growth
- More suitable for grass and red clover swards and pure stands of chicory
- Simple to integrate leader-follower system

## Weaknesses

- High set up cost, fencing and extra water troughs
- Careful measurement needed to monitor changes in sward height/mass
- Sward will deteriorate more quickly if rest periods don't match plant needs
- Dairy cows need tracks to prevent poaching damage
- Swards more open with fewer plants/ha, and more bare ground
- Livestock need to be trained to electric fences
- Lamb losses from mis-mothering can be higher if rotational grazing is used at lambing
- Shade and water should be provided in each paddock
- Seasonal distribution of grass growth is more variable compared to continuous grazing

# Cell grazing/intensive rotational grazing

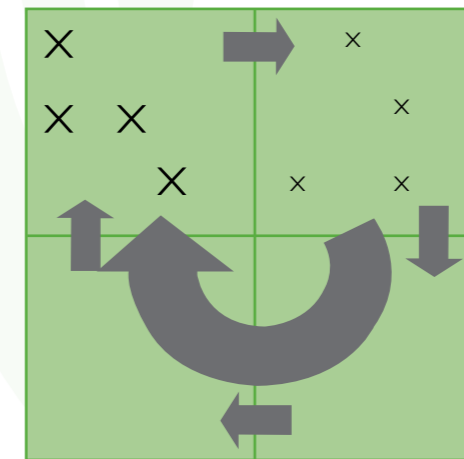
Livestock graze small paddocks/cells for 0.5 to 1 day at maximum stocking density to match the grass available. It promotes more even grazing and reduces number of livestock tracks and preferred resting areas. Where cells are used in winter in conjunction with deferred grazing the system has been named "All Winter Grazing" (AWG).



Stock graze small paddocks for 0.5 - 1 day before moving on

# Leader - follower (forward creep) grazing

Livestock graze a number of fields or paddocks in turn with older or less productive stock following younger or more productive stock. This allows the productive livestock to graze the best quality grass ahead of the older stock. It is always essential to monitor the follower group to check their performance is not being compromised.



More productive stock graze ahead of less productive using a creep gate

Dry cow grazing in November, Moreton Farm Continuous Grazing



# Deferred grazing

Swards are cut for silage or grazed down to 4cm then shut up from mid-summer when they are allowed to re-grow before being grazed from late summer onwards by less productive stock e.g. dry cows/ewes/store cattle. The grass is used to extend the grazing season or provide additional cheap forage for out-wintering.

## Strengths

- Low cost system: grazed grass can be up to half the cost of grass silage
- Suitable for spring calving beef and dairy herds and in-lamb ewes
- Provides flexibility round the housing period
- Less manure storage and spreading
- Animal health may be better
- Quick and easy method of feeding large numbers of livestock

## Weaknesses

- Suitable fields: need free draining soils and shelter
- Requires either dense permanent pastures or 'sacrifice' fields that will be reseeded the following spring
- Care required to avoid breach of cross compliance
- Good stockmanship needed to monitor livestock health
- Extra forage may need to be placed in fields to meet livestock energy requirements
- Additional energy required for maintenance

Grass grown for deferred grazing; big bales of grass silage are put in the fields during the summer to supplement the grazing



## Grazing for parasite control ('clean grazing')

Clean grazing involves managing pastures so that sheep, and particularly lambs, are only put into fields that have very low or no worm infestation. Clean grazing includes;

- land that has not had sheep on it for twelve months
- a new ley on land used for arable crops in the previous year
- swards grazed by cattle the previous year
- silage aftermaths grazed from July onwards which have not carried sheep since the previous autumn

With careful planning clean grazing can be integrated into either continuous or rotational grazing systems or 'safe grazing' adopted for less vulnerable animals on areas of light infestation.

## Agri-environment grazing

Graze land according to scheme prescriptions.

Generally better grazed by less productive stock with lower dietary needs such as suckler cows or weaned ewes.

Useful to diversify income streams and free up improved grazing for productive stock.

## Set stocking

An inflexible method of grazing where a set number of stock are maintained on the same area for the grazing season.

Adjustment for herbage availability is limited to supplementary feed. The term set stocking is often incorrectly used for continuous grazing.

Grazing land in an agri-environment scheme to meet prescriptions



## Rotational grazing at Dinas Island

Dinas Island in Pembrokeshire is a specialist sheep farm run by husband and wife team Neil and Lynda Perkins with help from Neil's father Roger. The 600 acre, part owned - part tenanted farm covers three holdings and carries 1600 Lleyn ewes plus 400 followers. About two thirds of the farm is improved grassland, the remainder is land of high environmental value and includes coastal strip, woodland and hay meadows.

Six years ago, influenced by a visit to New Zealand as part of a Nuffield Scholarship, Neil and Lynda, both graduates of Aberystwyth University, decided to simplify their farming system and focus on surviving long term without single farm payment by improving grazing management. The business' attention to detail has improved profitability and been recognised through two major awards in 2012 - the Farmers Weekly Sheep Farmer of the Year and British Grassland Society National Grassland Competition.

Grass leys were reseeded with new varieties including high sugar grasses, white clover and chicory and Neil introduced rotational grazing to optimise livestock and grass performance. Electric fencing has been used to create ten 10ha (24 acre) blocks which can be split into two with temporary netting fences. Seventy-five ewes are turned into each 5ha (12 acre) paddock after lambing indoors. By early May the field is divided into quarters and the stock rotated around the 2.5ha (6 acre) blocks.

The environmental land is integrated into the system and used to graze dry ewes and produce hay whilst maximising agri-environment payments. Improved fields are rested over the winter and ewes are housed to ensure that there is enough grass to support ewes and lambs in the spring. Swards height is measured weekly with a rising plate meter and providing target heights are met, no concentrates are fed at grass. Lambs use creep gates to forward graze the best quality grass and clover with all lambs finished off grass. Surplus grass is controlled with a flying flock of ewes with singles or a light silage cut.

*Neil and Lynda Perkins, winners of British Grassland Society National Grassland Management Competition 2012 (photo courtesy of BGS)*



## Continuous grazing at Moreton Farm

Organic farmers Steve and Kim Jones and their son Lewis appreciate the importance of high quality grass and forage for their all year round high yielding (9,100 litres/cow) organic dairy herd at Moreton Farm, Wrexham.

The 121ha (300 acre) owner occupied farm is home to 140 cows and 90 followers.

The farm converted to organic status in 2002 and uses legumes, slurry and dirty water to support soil nutrient levels and crop growth. A carefully planned rotation of winter wheat, grass/white clover leys undersown to peas and barley and made into arable silage followed by lucerne is key to maintaining all year round forage quality. Ten acres of lucerne were introduced four years ago when Lewis, who was studying at Reaseheath College, saw the potential benefits for the system. It has been so successful it will continue as part of the rotation in future. The grass leys use the best varieties possible and always include 1.5kg white clover seed/acre to optimise sward digestibility, intake and mid-season growth as well as fixing nitrogen to support grass growth.

To keep winter feed costs to a minimum the cows are turned out as soon as ground conditions allow in the spring, often in early April to graze swards that will then be ploughed. They are then moved onto three fields close to the parlour which are continuously grazed for the summer. Steve aims to graze lush green grass with no stems or seed heads for the whole season, monitoring grass growth carefully, so that if it starts to get too long it is topped to maintain quality. A buffer feed of quality lucerne/grass silage is offered to even out forage intakes if livestock demand exceeds grass growth. Cows are tagged with electronic ear tags with a computer identifying high and low yielders and allocating concentrates accordingly to ensure they are not over or underfed. The milking herd is usually housed in mid October. Dry cows also continuously graze in fields further from the farm and careful management and low stocking rates allow them to graze well into the winter.

*Steve Jones, Moreton Farm*



Farming Connect offers 80% funding to eligible businesses for one-to-one technical support. For more information, please get in touch.



*Dry cows grazing in November, Moreton Farm*

**Authors:** Sue Buckingham, Heather McCalman, Huw Powell;  
*IBERS Grassland Development Centre*

*Images courtesy of IBERS GDC*

## Contact

For more information on Farming Connect services and events, contact us:

**PHONE**

01970 636565

**E-MAIL**

farmingconnect@  
menterabusnes.co.uk

**WEBSITE**

www.menterabusnes.co.uk  
/farmingconnect

Catch up with all the latest news from Farming Connect by joining our online community. Follow us on:

**FACEBOOK**

facebook.com/farmingconnect

**TWITTER**

@farmingconnect

Farming Connect support, guidance and training is delivered by Menter a Busnes on behalf of the Welsh Government