

New Entrants to Farming

Rotational

Grazing



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Rotational grazing is a great tool for new entrants as well as established farmers, as it enables greater stocking densities. Those with fewer opportunities to gain more land, or using seasonal lets, can expand flock or herd size through better grassland utilisation – rotationally grazed grass is better utilised grass.

Rotational grazing involves small field sizes (or paddocks) combined with frequent stock movements to reduce grass wastage and provide a rest for the grass. The intensive grazing followed by a rest period leads to greater grass utilisation, improved pasture quality and greater grass yield.

How to go about it

1. Set up

A simple example is the three week, three day rotation in combination with adaptations to suit the conditions of the season.

The three week, three day rotation will involve:

- **Eight paddocks**
- **Moving stock every three days**
- **Providing a three week rest period**



2. Modification considerations

Rest period is dictated by the grass growing conditions, as grass growth slows, more paddocks need to be brought into the rotation to increase the rest period and achieve target pre-grazing heights.

General rest periods (must be adjusted according to grass growth):

- **Spring: 15-21 days**
- **Summer: 25-30 days**
- **Autumn: 30-40 days**
- **Winter: 90-100 days**

Utilisation: The shorter the grazing duration the greater the utilisation (amount consumed) – the animals are given less opportunity to waste.



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Area and group size

Maximum group size is based on practical handling capability rather than feed supply, e.g. consider the feasibility of drenching over 500 lambs in one go. The stocking rate figures below are conservative based on average summer grass growth (40 kg dry matter per hectare). This leaves room for flexibility during peak growth. This is a framework, adaption will be necessary to suit grass growth on your farm. Use the guideline targets for grass height entry and exit to support movement decisions.

Stock	Maximum group size	Guide stocking rate numbers/ha* (number/acre)	Area for maximum group ha (acres)	Paddock size for maximum group** ha (acres)	Target grass height -Entry cm	Target grass height -Exit cm
Ewes and singles	350	17 (7)	21 (51)	2.5 (6)	8	4
Ewes and twins	250	12 (4.8)	21 (52)	2.5 (6.5)	8	5
Growing lambs	500	33 (13.5)	15 (37)	2 (4.5)	8	5
Growing cattle	100	4.5 (1.8)	22 (54)	2.8 (7)	10	5
Finishing cattle	80	4 (1.6)	20 (47)	2.5 (6)	10	5
Spring calving cows and calves	50	3 (1.2)	17 (42)	2 (5)	8	5
Autumn calving cows and calves	60	3.8 (1.5)	16 (40)	2 (5)	8	4

* Across the whole rotation **based on the three week, three day system, i.e. area divided by eight.

3. Reacting to the conditions

As the table above is based on typical summer grass growth, it is likely that grass will get ahead of the animals in the spring when grass growth is at its peak. This will be evident when grass is above the target entry height when moving. This is where taking a paddock or two out for conservation is possible which reduces the rotation length.

If grass is getting ahead:

- Take paddocks out for conservation
- Use a follow-up group with lower feed demand (e.g. dry cows, ewes with singles)
- Mowing or topping
- Deferred grazing (autumn) – shut up a field to be grazed later in year

If grass growth is slowing:

- Bring in additional paddocks – extend the rotation with land designated for silage or hill ground
- Apply Nitrogen when soil temperatures are above 5°C
- Feed concentrates and/or conserved forage
- Reduce stocking – sell culls, store animals, find grazing off farm

Materials

Electric fencing isn't essential but is often used to split up fields to manipulate the grazing pressure. Most farmers will need to split fields over 3ha (7.5 acres) to improve grass utilisation and provide rest period. As fields are split up, water becomes an important consideration too. The table below lists some materials that might be necessary.

Item	Role	Considerations	Indicative cost
Electric fencing - General			
Energiser	Converts the mains or battery power into high voltage pulses of current.	One joule of stored power should be enough to power 5-6 miles of 2.5mm diameter high tensile wire, or 1 mile of polywire at 4,500V. 6 joule energiser recommended. Minimum voltage: 4000V for cattle, 5000V for sheep.	£200-250
Earth Stakes	For any electric fence to work correctly it needs an earth stake or rod in the ground attached to the energiser. This ensures the power returns through the ground to the energiser.	Aim for 40cm of earth rod for every joule of energy. Multiple earth stakes should be at least 4 metres apart and connected with insulated cable. Place in wettest area of field.	£10/stake £1/metre for cable
Electric fencing – Semi-permanent			
Posts	Hold the wires at consistent height, anchor fencing robustly in the ground.	Material: fibre glass, insulated plastic or galvanised steel.	£4-10/post
Wire	Conduct electricity.	High tensile wire lasts longer and conducts better than polywire. Need five wires for sheep and two for cattle.	£0.14/metre
Insulators/Wire clips	Prevent wire touching stakes which would cause power leakage	Determined by post size and material.	£0.40-0.50 each
Gateways	Provide easy way to move animals through paddocks without compromising the conductivity of the fence.	Gate handles required for single or two wire fences, for greater number of wires gate posts and attachments required.	Handles: £1.76-8.00each Gate systems: £60
Electric fencing - Temporary			
Posts	Hold the wires at consistent height, well anchored but lightweight and easy to move.	Material: plastic or fibreglass	£2.50/post
Wire	Conduct electricity.	Polywire. Need three-four wires for sheep and two for cattle.	£0.10/meter
Reels/spools	Organising the wire.	Must be compatible with the winder	£20-40/reel
ATV Winder	Labour efficient way of setting out the wire.		£1200
Electricity fence tester	Check the voltage through the wire.		£10
Battery	Electricity source alternative to mains power.	Insulating the battery from temperature fluctuations will increase its lifespan. Select a leisure or marine battery as these are designed to cope with deep discharge/ recharge cycles unlike standard vehicle batteries.	£130 (potential to get cheaper from a scrapyards)
Solar Battery Charger	An option to maintain battery charge for longer	Weather dependent, battery output should be monitored on more cloudy days.	£50

Water infrastructure			
Trough	Access to water	Mobile troughs may be beneficial to provide flexibility, often not compatible with mains water supply due to back flow contamination risk. An air gap in system is required, i.e. ball valve in header tank.	£200
Mobile water storage	Mobile water bowsers can be a good starting point but they are labour intensive and impractical on steep land	Intermediate bulk container (IBC) and associated trailer	£800
Header tanks	Water storage at high parts of the farm to gravity feed a network of troughs		£2,300 for a 20,000 litre tank
Pipes	Connect stored water and paddocks.	Larger pipes can connect the fields and smaller pipes can be used for the paddocks. 25mm pipes have double the flow rate of 20mm pipes.	£0.70/meter

Labour

A big concern with rotational grazing is the increase in labour demand. This need not be the case. Some labour saving tips are listed below.

Tips

- **Purchase a quad mounted reel system to save time setting up fencing**
- **Reduce gate opening time by putting bent 'u shaped' pipe at the front of the quad to go over electric fences or use grid ramps between fields**
- **If using temporary fencing, set up the paddocks a week to fortnight ahead of time**
- **Put in as much fencing as semi-permanent or permanent as possible**
- **Design the paddocks around the water troughs to avoid need to use mobile troughs**
- **Consider tracks between fields that can also be grazed**
- **Livestock checks under rotational grazing are often quicker as the animals are generally kept in larger group sizes**

Labour requirements

1. Set-up – temporary electric

Setting up electric fenced paddocks can take two people one day to set up seven 1 ha paddocks. Set up time is dependant on quality of equipment.

2. Set-up-Semi-permanent

Semi permanent fencing will take longer to set-up initially but this is a one off labour investment and does not require frequent alterations.

3. Maintenance: battery recharge, post/wire replacement or fixing

Maintenance might amount to 3 days per year.

4. Movements

Stock movements will take 15 minutes per shift when the animals are used to the system. This doesn't include travel time to the paddocks.