



**Better Grazing = Better Business**

# Introducing a rotational grazing system



## Potential benefits include:

- Increased grass production
- Extended grazing season
- Increased stocking rates
- Reduced input costs (fertiliser and supplementary feed)
- Increased growth rates
- Increase resilience of pasture allowing it to cope with drier and wetter conditions
- Gain the ability to ration grass to stock during periods of slow growth

## Grazing terminology

<b>Kg DM / Ha</b>	The weight of dry feed per hectare of land which is available for stock to graze
<b>Sward measuring stick</b>	Tool which converts quantity of grass in sward into Kg DM / Ha
<b>Grass covers</b>	Measure of grass quantity on field, typically quoted figures are 1500 – 3000 Kg DM / Ha
<b>Average farm cover (AFC)</b>	An estimation of average grass covers across the farm in Kg DM / Ha
<b>Residual</b>	Quantity of grass left behind in sward after stock have moved onto next paddock, typically approx. 1500 Kg DM / Ha
<b>Rest period</b>	Time period between grazings, this will vary throughout season depending on grass growth rates but typically 21 to 28 days
<b>Rotation length</b>	Rotation length is determined by the rest period plus the time taken to graze one paddock

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# Fundamentals of Grass

## Dry matter explained

Dry matter is the proportion of the grass which remains after all the water content is removed.

Figure 1.



Grass plant = water + lignin

Figure 2.



Dry matter

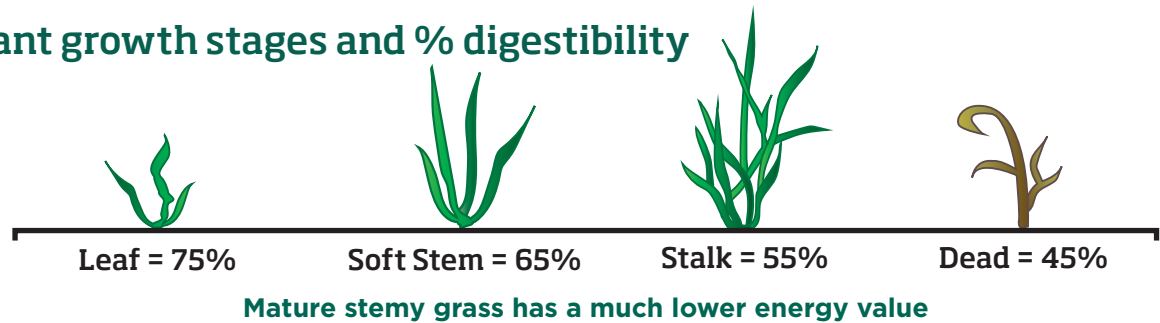
- **Livestock performance and nutrition is driven by Kg dry matter intake**
- **Stock don't eat centimetres of grass they eat Kg of dry matter**

## What is pasture quality?

Pasture quality describes its nutritional value. This is a combination of the portion of the diet that can be digested (digestibility) and is directly related to the energy that can then be used by the animal (Metabolisable Energy ME). High quality pasture contains more usable energy per unit of Dry Matter, and because it passes through the rumen quicker, livestock can eat more of it.

Pasture quality is determined by the proportion of leaf, stem and dead material in a sward. Young leaves have the highest nutritive value, followed by stem, with dead material having the lowest energy value.

## Plant growth stages and % digestibility



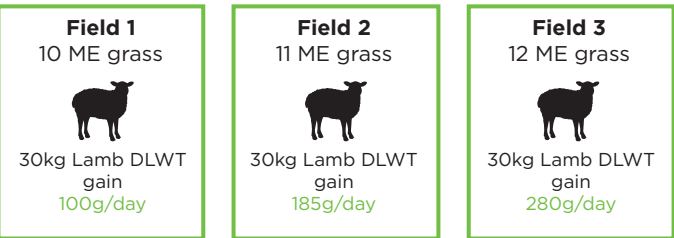
## Why does grass quality matter?

Nutrition is a strong driver of productivity, and therefore profitability. To help keep costs low, there is a need to minimise the consumption of costly feeds, such as silage and concentrates.

Metabolisable Energy (ME) is the amount of energy in a feed available for use by an animal.

- **Higher the ME of grass** → **the more energy available for animal performance**
- **Higher the ME of grass** → **the more grass the animal can eat**

## A Twofold Benefit

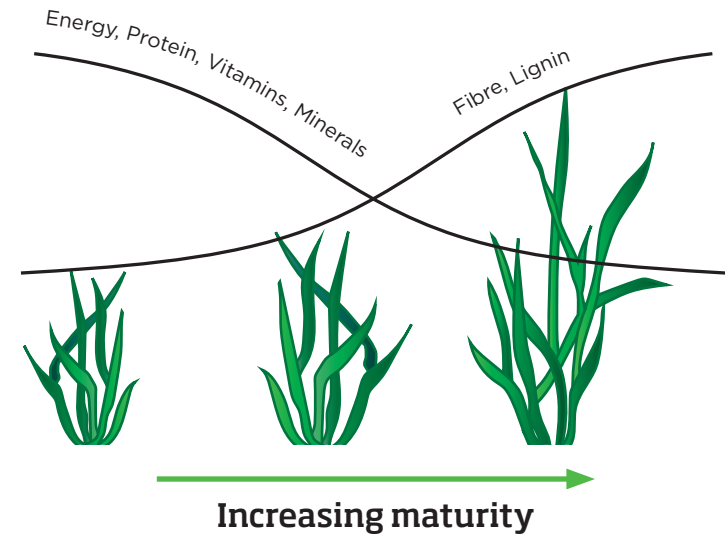


**Example of lamb growth rates on pasture of 3 different energy levels:**

**Increasing ME by 2 points increases growth rates by 180%**

## How do you manage to maintain grass quality?

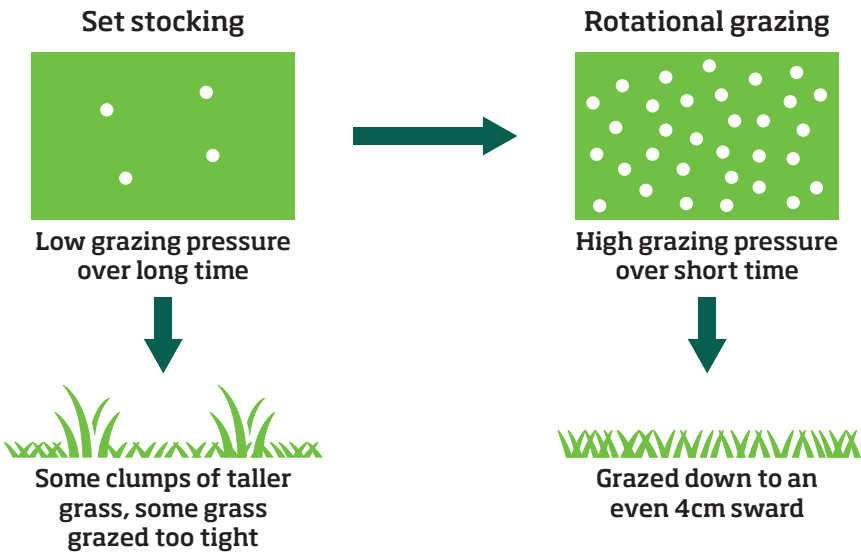
Grass naturally wants to get out of the vegetative growth stage, produce a stem, a seed head and reproduce, so it is difficult to maintain ME levels as the season progresses.



**The aim: Keep the plant in vegetative growth stage, prevent build up of stem and dead material in the sward.**

## Set stocking vs. rotational grazing

To achieve good managed grazing we need to have control of the pasture and therefore be able to adjust grazing pressure to suit pasture growth rate.



## The Solution

Rotational grazing is a method of controlled grazing where stock are allowed to graze an area for a set amount of time before being moved into fresh grass. By having multiple areas or paddocks to graze, the stock will get a continual supply of high quality grass before returning to the first paddock.

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## Principles

### GRASS MEASURING

### SUPPLY AND DEMAND

### SUBDIVISION TO CONTROL ALLOCATION OF GRASS TO STOCK

### INFRASTRUCTURE REQUIRED FOR SUB DIVISION

### CONTINUITY OF FEED SUPPLY THROUGHOUT GRAZING SEASON

## Actions

Use a QMS sward measuring stick or plate meter to get an understanding of what grass covers represent in Kg DM / Ha



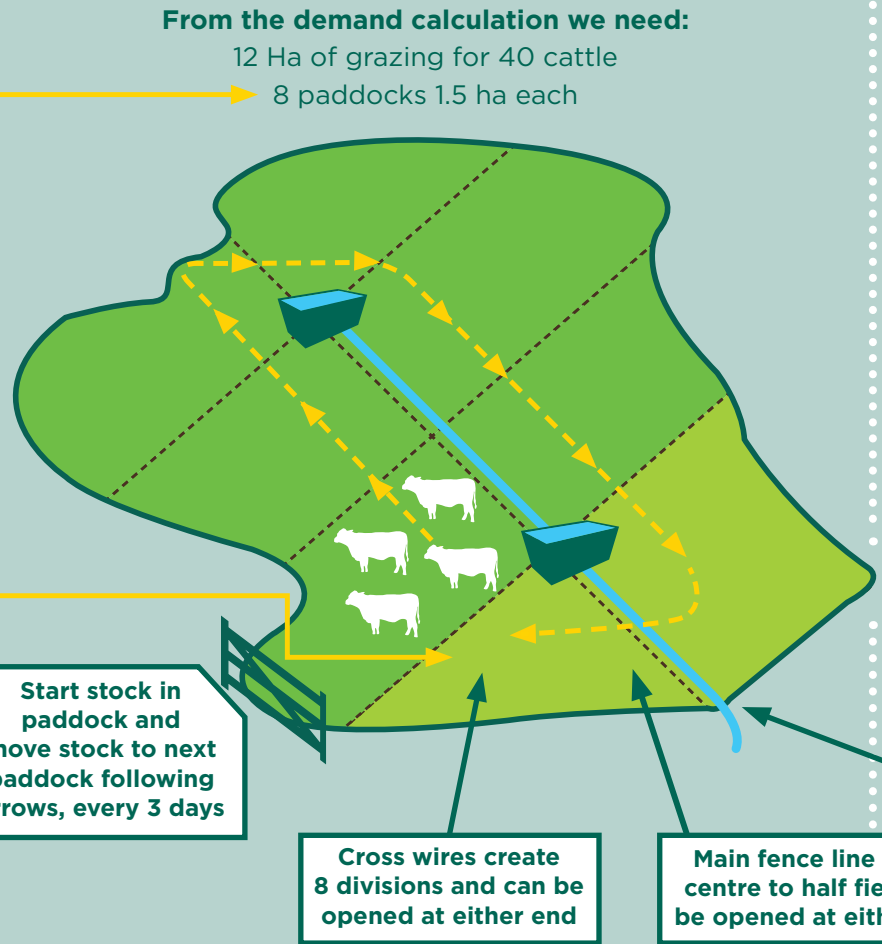
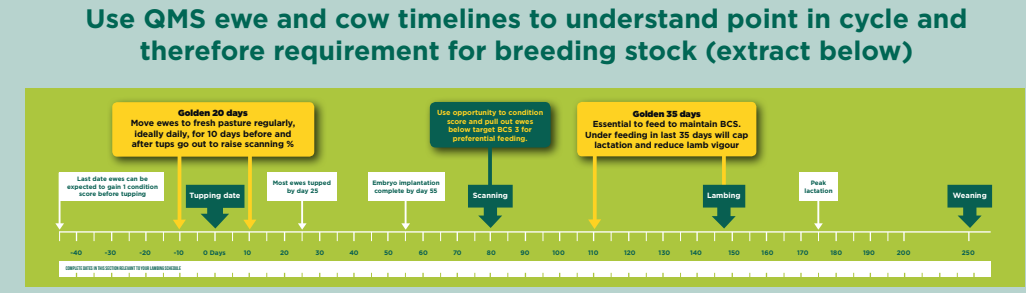
Cattle and sheep have different grazing requirements

**Work out your supply and demand**

- Grass measuring gives you the supply
- Demand is determined by class of stock

**The following example is based on 40 growing cattle weighing 400kg which are to be moved every 3 days**

Demand: 40 X (400 X 3%) =	480 Kg DM / day
In 3 days these cattle require: 3 X 480 =	1440 Kg DM
Grazing from 2500 down to 1500 =	1000 Kg DM / Ha
Paddock size to suit 3 day shifts: 1440 ÷ 1000 =	1.44 Ha
Aiming for a <b>24 day rotation</b> with 3 day shifts we need 8 paddocks: 8 X 1.44 =	11.52Ha
Estimate grass growth rates to grow 1000 KG DM / Ha in 21 day rest period: 1000 ÷ 21 =	48 Kg DM / Ha / day
If growth exceeded 67 Kg DM / Ha / day then rotation can be shortened: 1000 ÷ 67 = 15	15 days rest required: 15 + 3 = 18 day rotation. 2 Paddocks can be taken out to be cut for silage as there is going to be a surplus.



**Temporary electric fencing can be the lowest cost and most flexible option for subdividing fields.**

- Plastic posts
- Poly or steel braided wire
- Battery energiser

QMS have a series of 6 videos "Electric Fencing for Better Grazing" to view search for QMSMooTube.

**Blue plastic water pipes laid across the surface following the fence lines is an easy to install temporary solution.**

- Small water troughs can be moved with stock from paddock to paddock
- Hydrant style fittings in pipe allow for quick connection
- Large centrally positioned troughs can supply multiple paddocks for the season

**Water pipe laid along central fence line and is connected to 2 large troughs which supply all 8 paddocks**

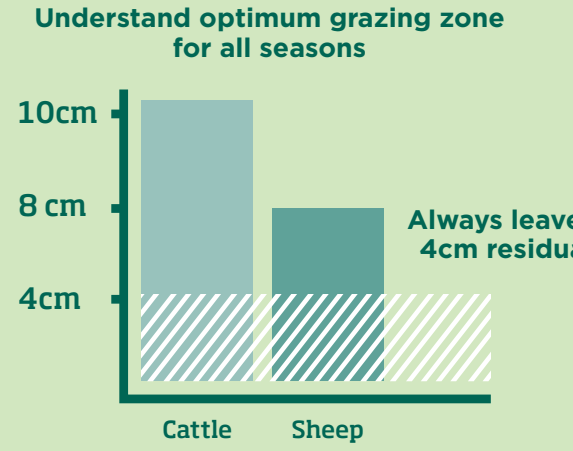
**Weigh stock regularly to ensure they are achieving desired growth rates and therefore adequate supply of grass.**

**Record grass measuring data to understand your farms grass supply throughout the grazing season and compare it to your stocks demand.**

**Supply and demand**

Transfer surplus summer grass (green hatch) to spring/winter deficits (red hatch)

## Targets



Stock type	Allocation (% of bodyweight)
- Dry ewes or cows	2%
- Mid-pregnancy ewes or cow	
- Mature rams or bulls	
- Late lactation cows	
- Late pregnancy ewes or cows	2.5%
- Finishing cattle	
- Early to mid-lactation cows	
- Mid or late lactation ewes	
- Replacements	3%
- Growing cattle	
- Early lactation ewes	
- Flushing ewes or cows	
- Growing lambs	4%

**Aim to move stock every 2-3 days to ensure a supply of high quality grass and drive animal performance:**

**An 8 paddock system on 3 day shifts gives a 24 day rotation**

**This allows the grass 21 days rest between grazings.**

**Fencing suggestions**

Ewes and lambs require 3 wires  
Cows and calves require 2 wires  
Young cattle require 1 wire

**Ensure you have adequate supply to meet livestock requirements:**

Lactating ewes and cows need up to 15% of liveweight in water per day (600kg X 0.15 = 90 l/day)  
Growing cattle up to 12% liveweight per day

**Maintain quality throughout summer by reducing the grazing area.**

During times of high grass growth rates shut up high performing paddocks and cut for silage. This will reduce the rotation length and ensure stock are grazing within the **optimum zones**.

Poorly performing paddocks can be taken out during the summer and sown to a forage crop to **extend** the grazing season and then be reseeded next spring.

**Match grass supply with nutritional demand of stock throughout grazing season by adjusting allocation**