

How to measure grass

Maintaining a constant supply of high quality green leafy grass can be easily achieved by walking paddocks weekly and measuring the amount of grass on the farm. Poor grazing management leads to fluctuation in pre-grazing yields, with problems of not enough or too much grass on the farm.

Measuring/estimating the quantity of grass in each paddock

Method 1: The first method uses a quadrat and shears.

Once you become confident at estimating the quantity of grass in the paddock you can start to estimate it by eye (eyeball) it.

- A 0.5m x 0.5m quadrat is placed in an area that is representative of the amount of grass in the paddock.
- Knock water off the grass before cutting if wet.
- The grass within the quadrat is cut to between 3.5 and 4cm.
- The following equation is used to calculate the DM yield in the paddock:
- $\text{Weight of grass (kg)} \times \text{grass DM\%} \times 40,000 = \text{kg DM/ha in the paddock}$

Example: Grass cut within the quadrat weighs 200g (0.200 kg)

(Remember to subtract the weight of the empty bag) $\text{Grass DM\%} = 16\% (0.16)$ $0.200 \text{ kg} \times 0.16 \times 40,000$ (there are 40,000 quadrats in a hectare) = 1,280 kg DM/ha.

Table 1 Guidelines on DM percentage under different weather conditions

Weather	Grass DM%
1-2 days continuous rain	14 – 15
3-4 days continuous rain	12 – 13
Mixed sunshine and rain showers& second rotation	16 – 17
1st rotation in spring/drier weather	18 – 19
Over a week of continuous sunshine & high temperatures	20 – 21
Drought conditions	22 – 23

- DM will be higher if there is more dead (yellow) material at the base of the sward.
- DM will be lower if the sward is green and leafy.
- DM is usually two – three units higher in the afternoon than the morning.
- Regional growth rates are also available from your local Teagasc office. Method 2: The second method uses the plate meter.

Method 2: The second method uses the plate meter

Take heights across the entire paddock in a 'W' or 'X' pattern to ensure the quantity of grass in the paddock is accurately represented

- Subtract the ideal post grazing height/residual (e.g. 4cm) from the height of the grass in the paddock.
- Multiply the figure you get by 250 as there is 250kg DM/cm.

Example: Paddock height was 8.8cm 4cm is the desired post-grazing residual (8.8cm – 4cm) x 250kg DM/cm = 1,200kg DM/ha



Method 3: The third method uses the Grasshopper

A rising plate meter device known as the Grasshopper has been developed, with an ultra-sonic sensor to accurately and precisely measure compressed grass height, with recorded GPS coordinates.

The readings obtained are similar to those recorded by the plate meter in method two. It further has the capacity to transfer generated data automatically to a smartphone and then to an online database PastureBase Ireland. It then calculates the grass cover in the paddock.

