

How much dry matter is available?

A simple relationship has been established between the height of a cereal crop and the amount of dry matter (DM) present up to 25 cm in height. The estimate is:

Each 1 cm crop height = 65 kg DM/ha

This relationship holds in regions with plant establishment around 150 to 200 plants/m² (sowing rate 80 to 100 kg/ha) and row spacings of 17.5 cm.

However this estimate varies depending on the crop type and row spacing.

Crop	Relationship
Wheat	Each 1 cm = 60 kg DM/ha
Barley	Each 1 cm = 75 kg DM/ha
Triticale	Each 1 cm = 65 kg DM/ha

Subtract 10% DM for every 2.5 cm (1") increase in row spacing above 17.5 cm. Add 10% DM for every 2.5 cm (1") decrease in row spacing below 17.5 cm.

Grazing budget

Matching stocking rate to the feed available is critical to achieve even grazing of a crop. A grazing budget involves estimating the amount of DM present, the amount to leave behind, a crop growth rate and the amount the animals will eat.

The **amount of DM present** can be estimated using the simple height – DM relationship provided in this guide.

The **DM left after grazing** can be as low as 300 kg/ha but crop recovery will be slower.

The **crop growth rate** will vary between regions but are in the range of 20 to 30 kg/ha/day in July and 40 to 80 kg/ha in August. Local agronomists should have more accurate figures.

Animal consumption can be estimated by allowing 1 kg DM/DSE/day and wastage of up to 30%.

Example feed budget – how many stock are required?

A wheat paddock is measured at 1300 kg/ha DM at the start of July and we want to graze it down to 300 kg/ha DM over a month. The crop is growing at 25 kg/ha/day. The total feed available is 1000 kg/ha plus 30 days @ 25 kg/ha/day = 1750kg/ha.

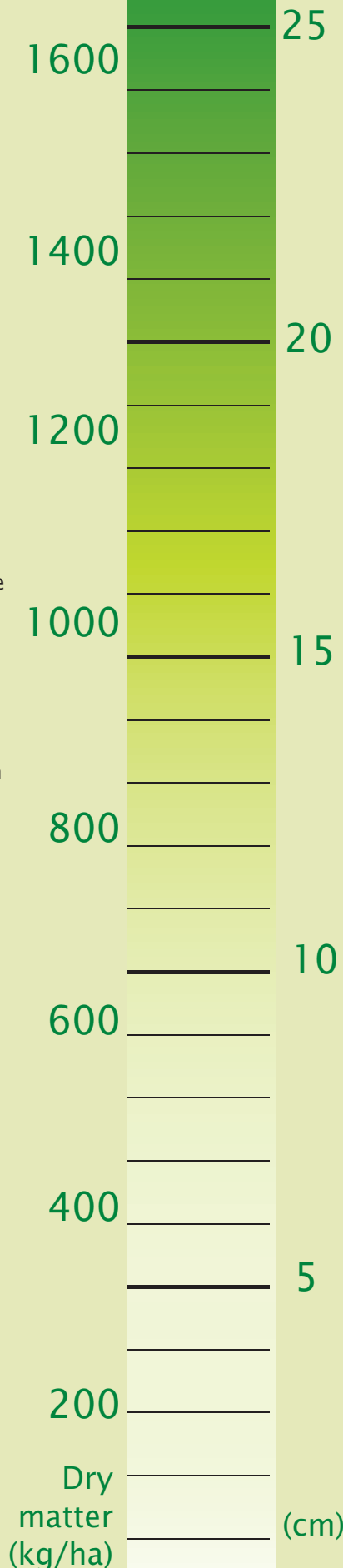
We have pregnant merino ewes available, rated at 1.5 DSE/ha. They will eat 1.5 kg DM/day. Wastage is estimated at 20%. Total feed required = 54 kg of DM over 30 days.

The stocking rate required is:

1750 kg/ha DM available / 54 kg eaten per animal = 32 ewes/ha.

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Grazing winter cereals in high rainfall regions

All winter cereals can be grazed, not just dual purpose or winter varieties.

Dual purpose or winter varieties have been bred to prevent the crop running to head until the plants experience a cold period.

This usually occurs in late winter and therefore provides a relatively longer period for grazing when sown early, compared to spring varieties.

Any cereal can be grazed when the plants are anchored and have grown secondary roots. This usually occurs around the three leaf stage.

If the crop is to be used for grain, then grazing should be completed by the time the crop reaches growth stage 30 (start of stem elongation).

Crops can be grazed 'into the ground' before growth stage 30 with minimal or no grain yield penalty if spring weather conditions are favourable.

Grazing also delays crop maturity.

Careful consideration should be given to stocking rate and duration of grazing to avoid uneven grazing which can lead to variable crop maturity.

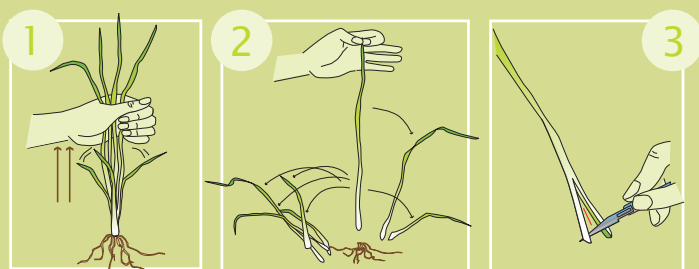
Determining growth stage 30

Growth stage 30 (GS 30) cannot be determined by a date on the calendar, although dual purpose or winter varieties are more predictable.

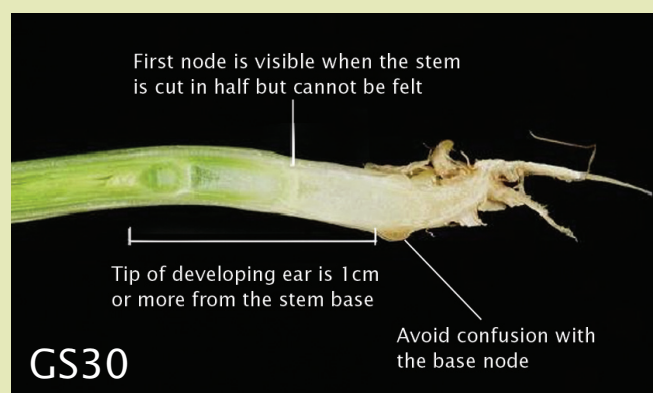
Visual observation of the emerging embryo ear is the only way to accurately assign this growth stage.

How to dissect a cereal plant to determine growth stage

- Pull up a plant and shake the dirt off the roots
- Pass your hand around the plant and draw upwards to identify the tallest leaf (this will be attached to the main stem of the plant)
- Peel off any dying leaves
- Cut the roots from the plant at the stem base
- Cut the stem lengthwise along the stem to expose the embryonic ear.



Growth stage 30: Tip of the embryo ear is 1 cm or more from base of the shoot. No node is detectable. Grazing should cease at this stage to avoid damage to the embryo ear and potential grain yield loss.



Growth stage 30 refers to the development phase when the plant stops tillering and the embryo ear which has formed in the base of each tiller begins to move up the stem.

This phase is also characterised by each tiller beginning to thicken and nodes forming low down on each tiller.

How to pick when GS 30 is approaching

Grazing delays the transition from tillering to stem elongation by a few days. Also the main stem of a cereal plant is usually more advanced in its development than the neighbouring tillers.

To gain an indication that GS 30 is approaching, monitor the main stem on plants that have not been grazed. When these plants begin stem elongation, the rest of the grazed crop will not be far behind.

Establishing an exclusion area in a paddock with weldmesh or portable sheep yard panels can provide a point to monitor crop development.



Growth stage 31: The first node on the stem is detectable and is 1 cm or more above the base of the shoot. There is a space between the node and the base of the shoot. Grazing at this growth stage will damage the embryo ear and result in grain yield loss.

