

Whole Crop Cereal Silage Harvest info

Harvest Timing

Correct harvest timing of whole-crop cereal silage is important to ensure optimal yield, quality and ensiling conditions. Crops should be between 35-40% dry matter (DM) (the “cheesy dough” stage).

This is the ideal time for natural preservation with soluble carbohydrates being utilised by bacteria for fermentation within 5 days of ensiling. Compaction is most efficient at this time and anaerobic conditions are easily achieved during fermentation, especially with inoculants, meaning reduced losses and a high level of animal acceptability and uptake.

Approaching harvest, the dry matter will increase by almost 1% per day (barley is 1.5-2% per day). Yield will increase about 1 t DM/ha every 5 days. Metabolisable energy (ME) will increase about 1 unit of ME every 4 days up to 40% DM. Harvesting too late can cause compaction problems, grain drop during harvest and poor utilisation by stock.

Harvest Management

Quality and yield can be manipulated by the cutting height. Trials indicate that increasing the cutting height by 10 cm on a 15 t DM/ha crop will reduce yield by 1 t and increase ME by 0.2 MJ/kg. The ME of straw is 6-7, leaf 9-10 and grain 13-14.

Direct chop is preferred, as it causes less dirt contamination. Wilting (which is not recommended) can increase DM percentage by up to 1% per hour in Canterbury’s hot, dry, windy conditions.

A 30-50 cm chop length to provide rumen stimulation is ideal for pit silage. It can be longer for baleage but can have less reliable quality. Chop length should be kept short for sheep.

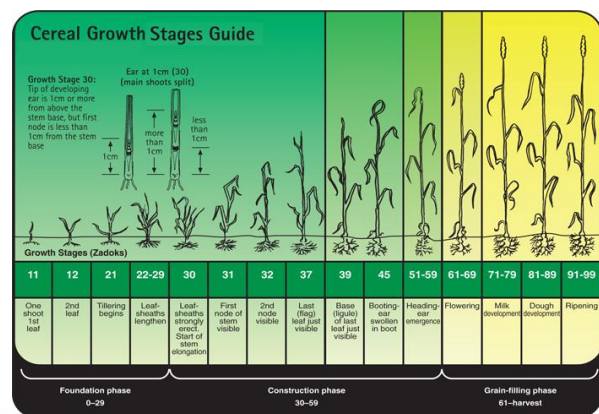
Plant maturity advice

Choose representative sample plants, not stressed by disease, lack of N or drought. Select grain from the tallest ears (primary tillers) and from the centre of the head length and the outside grains of each spikelet (group of 2-4 grains across). These are the most mature grains.

Crops mature at 1-2% DM/day with barley being the fastest. Periods of very cool or hot weather can alter the speed of maturity by 1-4 days.

Cropping farmers may be familiar with the use of Zadock’s decimal code cereal growth stages (GS) to identify the following growth stages. Follow this link to download a copy of the Zadocks cereal growth stage chart:

<http://www.specseed.co.nz/downloads/CerealGrowthStagesGuide-SpecialtySeedsNZ.pdf>



Whole Crop Cereal Silage Harvest info

Plant description at maturity

Early 30% DM “very late milk” stage (GS 79) Squeezed grain has a milky liquid left and is more like thick white juice. Stem is green, lower leaves are beginning to yellow; upper 2-3 leaves are fully green. Plant is relocating resources from bottom leaves into grain, leaving yellow colour.

Then 2-4 days later with increasing yield (0.5-1 t/ha DM):

Early 33% DM “very soft dough” stage (GS 81) Squeezed grain has very little milky liquid left and is very soft and pliable. Stem is green, lower leaves are partly yellow, upper 2-3 leaves are fully green.

Then 2-4 days later with increasing yield (0.5-1 t/ha DM):

Good 35% DM “soft dough” stage (GS 83) Squeezed grain has almost no milky liquid left and is soft and pliable. Stem is green, lower leaves are mostly yellow, upper 2-3 leaves are fully green.

Then 2-4 days later with increasing yield (0.5-1 t/ha DM):

Best 38% DM “cheesy dough” stage (GS 85) Squeezed grain firming up with no milky liquid left but still soft and pliable like good putty. Not yet crumbly like chalk. Stem is green, lower leaves are yellow, upper 2-3 leaves are mostly green but just starting to go yellow. Plant has almost finished progressively relocating stored resources from bottom leaves into grain, turning them yellow before drying off.

Then 2-4 days later:

Good 41% DM “firm dough” stage (GS 87) Squeezed grain has no milky liquid left and is firm, but between pliable and crumbly. Stem is green to yellow at base, lower leaves are drying. Upper 2-3 leaves and head are yellowing.

Then 2-4 days later:

Late 45% DM “hard dough” stage (GS 90) Grain will dent by thumbnail but is chalky and crumbly. Stem is green to yellow, lower leaves are mostly dry, upper 2-3 leaves are yellow. Past last real silage stage, significant compaction and quality and utilisation problems. Consider leaving to harvest for grain at this stage.

Specialty Seeds would like to acknowledge the help of Agricom and Ravensdown in preparing this article.



specialtyseeds
NZ's INDEPENDENT SEED SUPPLIER

For more detailed product information please ring
0800 727 - 8873 or go to www.specseed.co.nz