

Conserving Whole Crop Cereal Silage

Whole crop cereals can be ensiled at 2 stages of growth:-

1. Flag leaf – Boot stage (Lower yield, generally higher ME & CP)
2. Late milk – Soft dough stage (Higher yield, variable ME, lower CP)

Fact Sheet 3

AVOID CUTTING AT CLEAR LIQUID STAGE (Often low palatability)

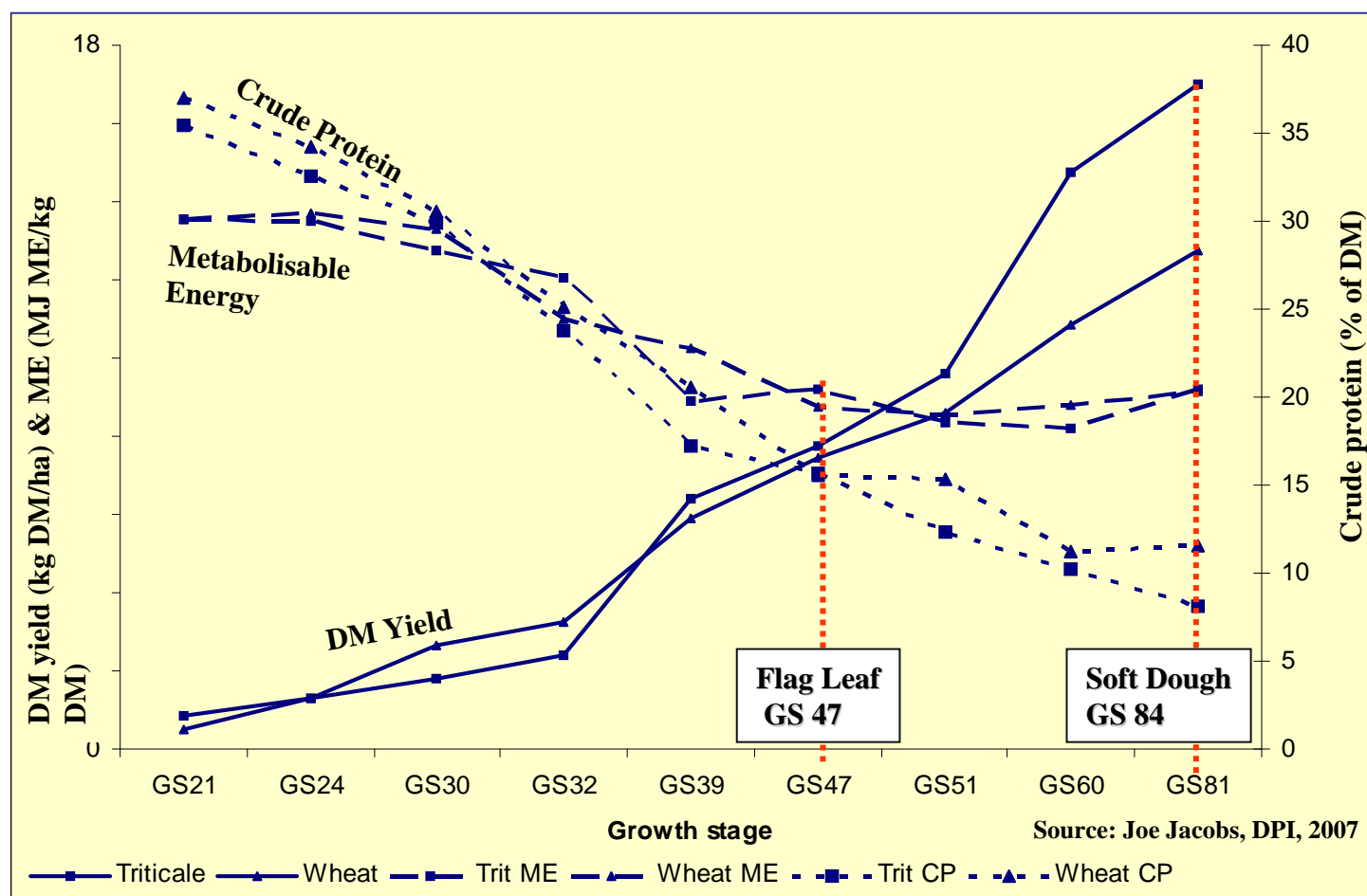
Table 1: Target DM content and stage of growth for ensiling cereals

Species	Flag leaf - Boot stage		Late milk - Soft dough stage	
	Stack/Pit ¹	Baled ²	Stack/Pit ^{1a}	Baled ²
Oats & Rye-corn	33 - 40	38 - 50	NR	NR
Barley, Wheat & Triticale	33 - 40	38 - 50	36 - 42	36 - 42 ³

NR – Not recommended, ¹ Ideally, should be precision chopped, ^{1a} Must be precision chopped,

² Preferably baled with chopper baler, ³ Lower bale DM recommended to ensure greater compaction

Figure 1: Effect of Growth Stage on Yield & Nutritive Value of Crackerjack triticale & Wedgetail winter wheat



Further information: 1: DPI Agnotes (Google *Forage Cereals*. 2: www.project3030.com.au 3. Frank Mickan 03 5624 2222

1. Flag leaf – Boot stage: Lower yield, higher ME & CP

(See 1 – 6)

- Must wilt to target dry matter content! (See Table 1)
- Cut at ~10 cm height
- Use tedder immediately after mowing. Avoid tynes picking up soil & manure
- OR use mower-conditioner (Flailed types are best). Leaf wide, fluffy windrows
- **Ideally harvest with Precision chopper**
- **Loader wagon (fine chop) or baler (preferably chopper) are suitable at this growth stage**
 - Harvest at lower end of DM range to aid compaction
- Difficult to wilt at this stage of growth (early in season, high yields)
- **Silage additives highly recommended, essential if not wilted enough!**
 - Use traditional or “normal” type additives that enhance fermentation
- Seal stack immediately after harvest. Bales: wrap (4 – 6 layers) at storage site within hours of baling



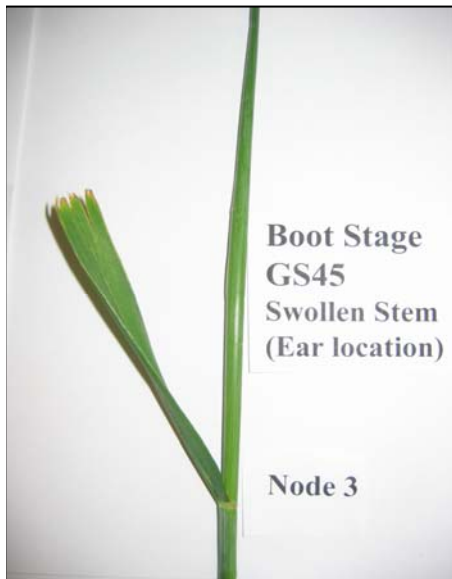
1. Oats: Early boot stage



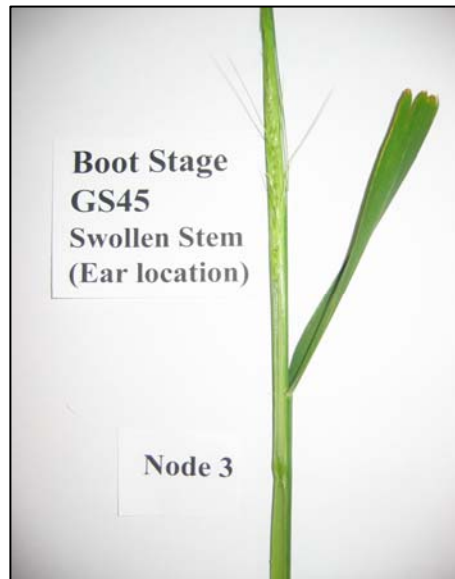
2. Wheat: Boot stage



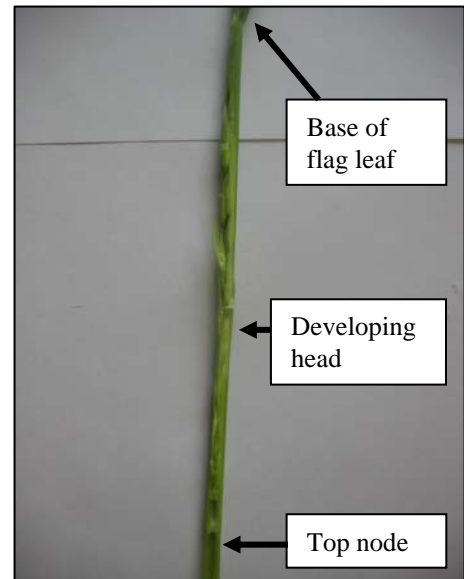
3. Early stages of heading



4. Triticale: Boot stage



5. Triticale: Dissected boot



6. Cereal: Dissected early boot



2. Late milk - Soft dough stage: Higher yield, variable ME, lower CP (See 7 – 9)

- Can direct cut (at 10 cm height) as standing crop! (See Table 1)
- **Preferably use precision chop forage harvester with direct cutting front**
- **Can use precision chopper with pick-up front but.....**
 - mow only, leave swathe wide and avoid raking to minimise leaf/grain loss
- **Use Aerobic Spoilage Inhibitor-type silage additives**
 - Specific Inoculants (*Lactobacillus buchneri* 40788)
 - Normal inoculants with *L. buchneri* in mix
 - Other appropriate additives, egs. buffered acids, Sulphur + Amylase, etc.
- **Use Loader wagons at own risk!**
 - Chop length often too long, impossible to compact well
 - If used, apply aerobic spoilage inhibitors (see above) to control aerobic spoilage
- **Use balers at own risk!**
 - High DM (& Quality) losses due to grain/leaf losses at baling
 - If storing as round bales, use traditional/"normal" silage additives to assist fermentation
 - If storing as large square bales under sheets, use aerobic spoilage inhibitor
 - Vermin must be controlled (they "sense" the grain & will chew through plastic to get at it!)



7. Forage Triticale: Side view of crop
Late milk – Early soft dough



8. Forage Triticale: Crop heads
Late milk – Early soft dough



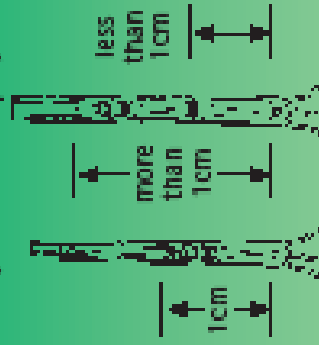
9. Forage Triticale: Squeezed grain showing early soft dough



Ravensdown Cereal Growth Stages Guide

Ear at 1cm (30)
(main shoots split)

Growth Stage 30:
Tip of developing ear is 1cm or more from above the stem base, but first node is less than 1cm from the stem base



Growth Stages (Zetlinks)

11	12	21	22-29	30	31	32	37	39	45	51-59	61-69	71-79	81-89	91-99
One shoot 1st leaf	2nd leaf	Tillering begins	Leaf-sheaths lengthen	Leaf-sheaths strongly erect. Start of stem elongation	First node of stem visible	2nd node visible	Last (flag) leaf just visible	Base (ligule) of last leaf just visible	Booting-ear swollen in boot	Heading-ear emergence	Flowering	Milk development	Dough development	Ripening

Vegetative stages

Grain formation stages

0-29

30-59

60-harvest



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