5.3 ASSESSING THE BENEFITS OF DUAL PURPOSE CEREALS (INVERLEIGH VIC)

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Location: SFS Inverleigh Research site.

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Rainfall (2005): 500.8 mm
GSR: (Apr – Nov) 350.3 mm

Background:
Typically, with summer storms and then dry autumns to follow across the southern regions of Victoria, there continues to be little or no dry matter on offer for stock to graze during this period. Sowing dual purpose cereals in late summer on this moisture can allow for establishment and survival of the crop past the autumn break. Winter peak feed deficits can now partially be filled by grazing these cereals, with benefits to both the livestock and cropping system.

Objectives:
To assess the grazing and grain potential of both MacKellar winter wheat and Yerong barley.

Summary:
The effect of grazing dual purpose cereals was to:

- provide high quality dry matter during peak pasture deficits;
- visually reduce the levels of leaf rust;
- significantly reduce final grain yield in MacKellar wheat;
- significantly reduce stubble volume at harvest;
- significantly reduce the amount of lodging just prior to harvest inYerong barley

Methodology:
A replicated trial was established consisting of 3 treatments (for both wheat and barley). Each treatment was 20 metres in length and 2 metres in width. Simulated grazing was carried out using a lawn mower with the plots being cut to 7 cm above ground level.

Treatments:
Trt 1: grazed once at GS29 (late tillering) and again at GS31 (1st node)
Trt 2: grazed only at GS31
Trt 3: no grazing

Sowing date:
Mackellar wheat - 3rd March,
Yerong Barley - 7th June 2005.
Seed treatment was Raxil at recommended rate

Sowing Rate:
Adjusted for seed weight, with the aim of establishing 200 plants/square metre.

Fertiliser:
200 kg/ha Granulock 11:19:0.3 Cu 1.3% + Zn 1.5% was applied at sowing. 100 kg Urea (46 kg/ha N) was applied on two occasions on all treatments, subsequent to the simulated grazing.

Results and Discussion

Leaf rust started to impact on Mackellar wheat from GS29 onwards. Grazing of the wheat and barley reduced the amount of leaf rust visible. Leaf rust was rife in theYerong barley, particularly late in the season. The forage material was analysed for quality with very high levels of metabolizeable energy and protein being recorded in both the wheat and barley (Table 5-8)

Table 5-8: Forage Dry Matter Quality

Variety	MacKellar Wheat – Crude Protein %	MacKellar Wheat – Energy MJ ME/kg dm	Yerong Barley – Crude Protein %	Yerong Barley – Energy MJ ME/kg DM
Trt 1: 1st Cut (GS29)	25.5	11.6	22.4	11.3
Trt 1: 2nd Cut (GS31)	22.4	10.8	18.7	12.0
Trt 2: 1st Cut (G31)	21.7	10.3	21.0	11.8
Trt 3: Grain only	X	X	X	X

Table 5-9: Effect Of Grazing On Dry Matter (kg DM/Ha) And Grain Yield (T/ha)

Variety	MacKellar Wheat (KgDM/ha)	Yerong Barley (KgDM/ha)	MacKellar Yield (t/ha)	Yerong Yield (t/ha)	Mackellar Stubble (t/ha)	Yerong Stubble (t/ha)
Trt 1: 1st Cut	380	150	X	X	X	X
Trt 1: 2nd Cut	197	1180	3.98	3.90	5.60	4.54
Trt 2: 1st Cut	486	2320	3.95	3.12	6.46	4.78
Trt 3: Grain Yield		[15]12480	5.37	4.42	7.32	9.67
LSD 5%			0.82	1.4		

[15] Small quadrant cut at milky dough showed that there is good potential to cut this forage late for silage.

Table 5-9 indicates a significant reduction in grain yield for MacKellar wheat following grazing. Yerong barley grain yield was less affected by grazing. Stubble loads at harvest were reduced by up to 24% in the MacKellar wheat following early grazing and up to 53% for the Yerong barley.