

Competitive Wheat Crops

Summary: The overall performance of Frame and Silverstar was much better than for Ouyen (yields at least 30% higher for Frame and Silverstar). In this very dry year (Decile 1.5) higher sowing rates (90 and 120kg/ha) at narrow row spacing (7") gave the highest yields for Frame and Silverstar. Ouyen performed better at the higher sowing rates at wider spacings.

Background: In Trial 8 some of the possible opportunities for controlling resistant ryegrass were discussed. Making crops more competitive at the cost of grass weeds is another way in which resistant ryegrass, and possibly other grass weeds may be tackled.

Aims: to determine whether wheat varieties differ in their competitive ability, and to see whether sowing rate and row spacings has an influence on grass weed numbers and yield.

Methods: Three wheat varieties (Frame, Ouyen and Silverstar) were sown at three rates (60, 90, 120 kg/ha) at two row spacings (17 and 34cm or 7 and 14"). Crops were sown on June 10, with 80kg/ha of Mallee Mix 1. Urea at 60 kg/ha had been pre-drilled.

Results: unfortunately the Main Site at Birchip was relatively grass weed free and we could not make observations about the competitiveness of the crops with grass weeds, such as ryegrass. However, the yield differences and optimum sowing rates and spacings were able to be determined.

Sowing Rate kg/ha	Row Spacing inches (cm)	Yield (t/ha)		
		Frame	Ouyen	Silverstar
60	7 (17)	1.37	0.71	1.29
60	14 (34)	1.61	0.84	1.46
90	7 (17)	1.51	0.62	1.68
90	14 (34)	1.24	1.41	1.16
120	7 (17)	2.08	1.06	1.58
120	14 (34)	1.48	1.22	1.12
Significant Differences:		P<0.05 LSD=0.39		
Variety		NS		
Sowing Rate		NS		
Row Spacing		NS		

Interpretation: The three wheat varieties did not behave the same. Ouyen yielded significantly less than Frame and Silverstar. There did not appear to be many influences from sowing rate or row spacings. However, Frame and Silverstar yielded the highest with the high sowing rate at narrow spacings. Whereas Ouyen was the reverse, it performed better at the higher sowing rates at wider spacings. It appears that Frame does not tiller as well as the other wheat varieties and may need to be sown at a higher rate. Investigations are to continue to see whether Silverstar has the same properties.

The protein contents were significantly highest ($P<0.05$) for Ouyen (14.7%) compared to Frame (14.3%) and Silverstar (13.8%). There was a significant effect of row spacing on protein (narrow spacing - 14.5%, and wider spacing - 14.0%). Screenings were above 5% for all varieties and treatments, with the majority of screenings above 15%.

Commercial Practice: Even in this very dry year the higher sowing rates were beneficial to yield for all three varieties. Frame and Silverstar performed better at the narrow row spacing compared to Ouyen which showed the reverse trend. For optimum yield narrow row spacings may be beneficial at the higher sowing rates for Frame and Silverstar.