Effect of sowing date on performance of canola varieties at Nyngan

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Background: Canola is a relatively new crop for the Nyngan district. High oil prices in 1998 and an early start to the growing season saw a large increase in the area of canola grown. The excellent results from the soft finish in 1998 saw a further expansion in 1999. Current NSW Agriculture recommendations are that farmers in the west should consider planting short duration varietes such as Monty and Karoo. A large number of new canola varieties are being released. These have not only a higher yield potential but higher oil content. There is a need to evaluate these new varieties for their performance at Nyngan. Recommendations need to be developed on which varieties to sow depending on when planting rains occur.

Methods: The paddock had a history of 3 years of wheat and was fallowed in August 1998. Five varieties of canola were sown using a Sheerer cone seeder with Primary Sales superseeder points at 18cm row spacing on 25th April and 26th May. Canola was sown at a rate of 4kg/ha with 20 kg N and 15 kg P and 17 kg S. The trial was a randomized block design with 3 replicates. Plot size was 6m by 44m and Verdict was used to control ryegrass and wild oats.

Results and Discussion: Monty sown on the 25th April ceased flowering about two weeks earlier than most other varieties. Being the first variety to produce pods it suffered more from mice damage than the other varieties. Oscar was the slowest variety to flower and mature but it was uniform and produced the highest yields (Table 1).

Table 1. *Effect of sowing date on the performance of canola at Nyngan*

Variety	Yield (t/ha)	Oil content (%)	Protein content (%)
	Early sown	**25/4/99**	
Oscar	1.24	35.1	37.0
Monty	1.07	37.3	34.4
Rainbow	1.02	35.3	35.5
Mystic	1.00	36.6	35.4
Karoo	0.89	34.6	34.5
	Late sown	**26/5/99**	
Mystic	0.64	36.5	36.9
Karoo	0.57	36.2	35.4
Oscar	0.52	34.4	38.1
Rainbow	0.52	33.3	35.4
Monty	0.48	36.1	35.6

Average SED = 0.07 & 0.05 for early and late sown trials, respectively.

The later sown canola resulted in greatly reduced yields and lower oil contents. Aphid pressure was moderate from flowering to podding but no spray was applied. Early sown canola reached a height of 1.6 m while the later sown canola reached lm. Mystic was the best variety when sown late but there was a substantial yield penalty if it was sown early relative to Oscar.

Effect of sowing date on the performance of canola varieties in Forbes district

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Background: Canola's yield potential is known to generally decline when sown later than mid May. The rule of thumb suggests that a 10% yield reduction generally occurs for every week's delay is sowing after mid May. Oscar has been the most widely grown canola variety in the Forbes area, accounting for over 70% of the area sowings. When sown in mid May at Forbes, Oscar has proved to be higher yielding than the quicker maturity varieties such as Monty. Such quick maturing varieties are best suited to the drier more marginal canola areas. With canola playing an increasing role in crop rotations in the Forbes area, the timing of sowing rains may dictate the choice of variety. Trials were conducted in both 1998 and 1999 to examine the performance of varieties when sown early and late. The trials were designed to test the hypothesis that quicker maturity varieties such as Monty, while not suitable for early sowings, could be suitable for later sowings in the Forbes area.

Methods: Trials (RBD with 3 replicates) were sown at Gunning Gap, Marsden and Caragabal in 1998, with an early sowing (30th April) and late sowing (10th June) at all sites. Unfortunately the Caragabal site was washed out by local flooding, with only 1 replicate harvested. These trials were repeated in 1999 at both Wirrinya and Mulyandry with the early sowing having to be planted dry in mid May, The late sowing occurred on the 17th and 23rd June, respectively. The trials included 11 commercial varieties: mid maturing Oscar, Rainbow, Scoop, Dunkeld , Grouse, Clancy (TT), Pinnacle (TT) and earlier maturing Monty and Mystic (1999 only), Drum (TT) and Karoo (TT). Seeds were sown at a rate of 4 kg/ha with 2 1/ha of Treflan applied presowing.

Yield only was measured in 1998, while in 1999 there were oil and protein analyses in addition to yield estimates. In 1999, 110 kg/ha of MAP was applied at sowing and an additional 300 kg/ha of gypsum was applied at Wirrinya. To control weeds an early post emergence application of 0.5 1/ha of Fusilade at Mulyandry and mixture of 0.4 L/Ha Verdict with 0.3 L/ha Lontrel at Wirrinya.

Results and Discussion: *Yield*- In general the 1998 trial yields (av. 1.89 t/ha) were above the 1999 yields (av. 1.52 t/ha). These results reflect that 1998 was a very favourable year for canola, with district canola crops averaging 1.9 t/ha. In comparison the district average in 1999 was only 1.5 t/ha (NSW Agriculture estimates). The early sown trials in 1998 yielded on average 27% higher than the later sown trials. The opposite occurred in 1999 with the early sown trails yielding 15% lower than the later sown trials. The early sown trials in 1999 were sown dry and did not receive germinating rainfall for 3 weeks. Once germinated they looked poor throughout the season, and never really recovered from the set back. The' later sown plots on the other hand, were sown into ideal moisture and thrived. The plot seeder used to sow the trial and its small baker boots provided little tilth. It is suspected that lack of tilth below the seed hampered seedling growth in the dry sown plots.' A better boot design that produces more tilth below the seed is required for dry sowing. These results indicate that early sowings will not always result in higher yields.

Variety	Yield (t/ha)	Yield (% Oscar)	Oil content (%)	Protein content
Scoop	1.58	118	43.4	37.4
Rainbow	1.35	101	43.9	35.0
Oscar	1.34	100	43.5	34.8
Grouse	1.28	96	45.5	35.4
Pinnacle	1.24	93	44.2	34.7
Drum	1.22	91	43.5	35.0
Mystic	1.17	87	43.8	35.4
Dunkeld	1.16	87	45.4	35.3
Monty	1.11	83	45.1	35.6
Clancy	1.09	82	43.0	35.0
Karoo	0.76	57	43.6	35.2

5% LSD Yield = 0.32.

Table 2: Performance of late sown (1 7 June) canola at Wirrinya in 1999

Variety	Yield (t/ha)	Yield (% Oscar)	Oil content (%)	Protein content .....(.%).....
Oscar	1.88	100	42.1	37.4
Dunkeld	1.85	**98**	45.7	37.0
Drum	1.82	**97**	43.1	35.6
Monty	1.78	**94**	44.3	35.2
Scoop	1.74	**93**	45.2	37.5
Rainbow	1.73	**92**	43.5	35.8
Mystic	1.63	87	43.0	37.2
Grouse	1.61	**85**	44.6	36.9
Karoo	1.59	**84**	42.6	35.0
Pinnacle	1.56	**83**	42.9	36.5
Clancy	1.44	77	42.1	35.9

5% LSD Yield = 0.30.

However, they do highlight that earlier sowings are vital for achieving good results in the high yield potential years (such as 1998). Rainbow and Oscar were the most consistent high yielding canola varieties for early sowing (Table 1 & 3). Pinnacle ranked as the highest yielding of the Triazine Tolerant (TT) variety for early sowing. Monty ranked poorly on yield when sown early. Monty also appeared very prone to Sclerotia when sown early. For late sowing Oscar and Monty were the most consistent high yielding varieties (Table 2 & 4). Pinnacle (TT) ranked poorly when sown late, with Drum ranking as the highest yielding TT variety for late sowings. Karoo was ranked as the lowest yielding variety, regardless of sowing date. All of the TT varieties yielded poorly when sown late.

Oil and Protein:- Analysis of the oil results in 1999 indicated a significant oil penalty with late sowing. This is particularly applicable to Oscar, which is known to produce low oil levels. Oscar ranked very well for yield, but poorly for oil when sown early or late. Monty had

significant better oil levels than Oscar for early and late sowings. Protein results were less responsive to sowing date.

Table 3: Performance of early sown (11 May) canola at Mulyandry in 1999

Variety	Yield (t/ha)	Yield (% Oscar)	Oil content (%)	Protein content .....(%).
Dunkeld	2.07	132	45.1	36.7
Rainbow	1.91	122	43.6	34.8
Scoop	1.89	120	44.6	36.7
Grouse	1.81	115	44.4	36.7
Monty	1.78	113	44.2	35.8
Oscar	1.57	100	43.0	35.5
Mystic	1.57	100	44.5	36.6
Pinnacle	1.36	87	43.1	36.2
Karoo	1.13	80	41.9	36.5
Clancy	1.13	72	41.7	35.8
Drum	1.07	68	42.6	36.5

5% LSD Yield = 0.59; Oil = 1.0; & Protein = 1.4.

Table 4: Performance of late sown (23 June) canola at Mxdyandry in 1999

Variety	**Yield (t/ha)**	**Yield (% Oscar)**	**Oil content (%)**	**Protein content** ..... .(.%)....
Oscar	1.88	100	42.1	37.4
Rainbow	1.85	**98**	45.7	37.0
Scoop	1.82	**97**	43.1	35.6
Grouse	1.78	**94**	44.3	35.2
Monty	1.74	**93**	45.2	37.5
Mystic	1.73	**92**	43.5	35.8
Drum	1.63	**87**	43.0	37.2
Clancy	1.61	**85**	44.6	36.9
Dunkeld	1.59	84	42.6	35.0
Karoo	1.56	83	42.9	36.5
Pinnacle	1.44	77	42.1	35.9

5% LSD Yield = 0.43; Oil = 1.3; & Protein = 1.3.

Conclusions: In 1998 and 1999, for early sowing Oscar and Rainbow were the highest yielding varieties for the Forbes district. They represent the best maturity group for an early sowing at Forbes. Later maturing varieties such as Pinnacle must be sown early to achieve good yields. Shorter maturing types such as Monty and Drum have a specialist role for late sowings (ie June). The many new canola varieties on the market for the 2000 season provide canola growers with a range of maturities for early and later sowing dates. However, growers should always aim to sow canola early (before mid May) whenever the season permits to maximise yield and oil potential.

Acknowledgments

Trial cooperators: Pat O'Connell. Richard Maslin, James Clifton, Bob Wythes and Kim Muffett.
Technical assistance; Greg Gibson, Trevor Russel. Neil Durning and James Deeves
Trial design and analysis: David Flower and Helen Nicol
Grain quality analysis: NSW Agriculture Oilseeds Laboratory Wagga