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## Oilseed agronomy

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DEPARTMENT OF AGRICULTURE

WESTERN AUSTRALIA

EXPERIMENTAL SUMMARIES

1983 SEASON

OILSEED AGRONOMY

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SEEDING RATES FOR WESBROOK

TRIAL NO: 83MT56      FILE: 4156 Ex

AIM: To identify the optimum seeding rate (and plant population) for Wesbrook rapeseed.

LOCATION: Mount Barker Research Station (M1)

SOIL TYPE: Gravelly loam      SITE HISTORY: Cereal 1981, pasture 1982.

DATE SOWN: July 4

DETAIL: Site sprayed with paraquat/diquat, scarified and worked back. Agras No. 1 topdressed across the site prior to sowing. Insecticide misted post planting. Hoegrass 1 L/ha sprayed mid August. Plots 1.25 x 30 m coneseeded.

RESULTS:

Seeding rate (kg/ha)	Yield (kg/ha)	Plant Density (/m <sup>2</sup> )	Anthesis d.m. (kg/ha)	Anthesis plant wt (g/plant)
1.4	557	45	2290	5.9
4.2	885	94	3800	4.6
7.0	1088	197	5330	3.4
9.8	1026	193	5690	3.6
12.6	1000	223	5380	2.8
Significance	***	***	***	**
LSD (0.05)	140	70	115	1.3

\*\*\* p<0.001, \*\* p<0.01

COMMENT:

1. Maximum seed yield was reached with a seeding rate of 7 kg/ha. This is higher than the recommended rate of 5 kg/ha however the late sowing time (July) may have influenced this result. The optimum plant population was about 180 plants/m<sup>2</sup>.
2. The quadratic equation,  $Y = 116 + 233X - 13X^2$  ( $R^2 = 0.95$ ) describes the relationship between seeding rate (X) and seed yield (Y).
3. The trial was waterlogged in late August. Toad rush (*Juncus bufonius*) formed a dense ground cover on the lowest seeding rate plots but was shaded out at higher rates.

INTERSTATE RAPESEED VARIETY TESTING

TRIAL NO: 83MT47 FILE: 4159EX

AIM: To compare the field performance of late generation rapeseed breeding lines from W.A., N.S.W. and Vic., with existing commercial varieties.

LOCATION: Mount Barker Research Station (E11)

SOIL TYPE: Gravelly loam HISTORY: Cereal crop in 1982

DATE SOWN: June 23

DETAIL: Site sprayed with paraquat/diquat and scarified.  
 Agras No. 1 (N:P:S 18:7.6:16) was topdressed across the site at 190 kg/ha prior to sowing.  
 Hoegrass 1 L/ha sprayed August 11.  
 Agras (ammonium nitrate) topdressed across plots at 150 kg/ha on August 12.  
 Plots coneseeded 1.25 x 12m, nearest neighbour design.  
 Trial harvested December 21.

RESULTS:

Variety	Species	Yield (kg/ha)	Oil Content (% dm)	Oil Yield (kg/ha)
RV3	<u>B. napus</u>	2520	47.5	1200
76N219-9	"	2290	47.6	1090
Wesbrook	"	2240	46.8	1050
75N70-63	"	2180	47.5	1040
RV5	"	2160	46.8	1010
BLN 241	"	2100	45.5	960
81792	<u>B. juncea</u>	1840	42.8	790
BLN 249	<u>B. napus</u>	1800	46.6	840
Wesroona	"	1780	45.2	800
RS 10	"	1770	46.3	820
Marnoo	"	1690	46.0	780
Chinoli A4	<u>B. campestris</u>	1540	45.4	700
BLC 152	"	1460	45.7	670
BLC 174	"	1440	44.0	630
Jumbuck	"	1420	46.0	650
ZEM - 1	<u>B. juncea</u>	1160	42.4	490
Chinoli B3	<u>B. campestris</u>	1090	46.1	500

Variety	Species	Blackleg Score (% severe)*	Sowing-Anthesis (days)	Thousand Seed Wt. (g dm)
RV3	<u>B. napus</u>	22.9	92	3.83
76N219-9	"	28.7	90	3.46
Wesbrook	"	17.7	88	3.55
75N70-63	"	10.2	88	3.55
RV5	"	34.3	92	3.81
BLN 241	"	15.3	95	3.35
81792	<u>B. juncea</u>	3.5	82	3.12
BLN 249	<u>B. napus</u>	28.6	95	3.66
Wesroona	"	27.9	95	3.58
RS 10	"	25.9	90	3.50
Marnoo	"	28.2	95	3.27
Chinoli A4	<u>B. campestris</u>	61.5	85	2.55
BLC 152	"	45.2	88	2.27
BLC 174	"	47.1	85	2.14
Jumbuck	"	54.3	82	2.26
ZEM - 1	<u>B. juncea</u>	0.7	111	3.33
Chinoli B3	<u>B. campestris</u>	66.6	78	2.98

\* % severe = % plants with > 50% crown circumference cankered.

COMMENT:

1. Site and seasonal conditions were favourable and crop growth was excellent. Growing season (May-November) rainfall received was 456 mm.
2. Blackleg incidence was high though none of the Brassica napus lines lodged.
3. RV3 was outstanding while the highest yielding named variety was Wesbrook.
4. The best B. campestris (Chinoli A4) line yielded less than the poorest B. napus line (Marnoo).

FUSILADE® (PP009) ON RAPESEED

TRIAL NO: 83MT57

FILE: 4156EX

AIM: To test the tolerance of rapeseed (Brassica napus cv Wesbrook) to the herbicide Fusilade® (I.C.I.) = Fluazifop-butyl 0.25 kg/L.

LOCATION: Mount Barker Research Station (M1)

SOIL TYPE: Clay loam

HISTORY: Pasture

DATE SOWN: July 4, 1983

DETAIL: Agras No. 1 topdressed across the site at 180 kg/ha presowing. Rapeseed sown at 5 kg/ha. Plot size 1.25 x 30m, 3 replications. Fusilade + Agral wetting agent applied 17 August in 100L/ha water.

RESULTS:

Rate of Fusilade (L/ha product)	Yield (kg/ha)
0	905
0.5	791
1.0	790
6.0	724

Treatment effect not significant ( $p > 0.05$ ).

COMMENTS:

1. The effect of Fusilade on rapeseed was not significant ( $p > 0.05$ ) however a reduction in yield was observed with Fusilade application. The herbicide did no visible damage to the rapeseed.
2. Hoegrass was inadvertently sprayed across the trial so an interaction between the herbicides cannot be discounted.
3. The trial was waterlogged during September.
4. Toadrush (Juncus bufonius) was the only significant weed in the trial and was not affected by Fusilade.
5. Further evaluation of Fusilade for postemergent grass control in rapeseed is required.

TRIAZINE RESISTANT RAPESEED

TRIAL NO: 83MT55 FILE: 4560EX

AIM: To examine the response of SRS 82-1 (triazine resistant) and Wesbrook (triazine susceptible) to simazine and atrazine applied post emergence.

LOCATION: Mount Barker Research Station (M1)

SOIL TYPE: Clay loam HISTORY: Pasture

DATE SOWN: July 4

DETAIL: Agras No. 1 topdressed across site at 180 kg/ha presowing.  
Rapeseed sown at 5 kg/ha.  
Plots 1.25 x 10m coneseeded.  
Simazine and atrazine applied 17/8/83 (3 leaf stage of crop).

RESULTS:

Line	Triazine rate (kg/ha a.i.)	Anthesis dry matter (kg/ha)	Yield (kg/ha)
SRS 82-1	Control	5,300	780
	Atrazine 1	6,840	1,590
	" 3	4,020	820
	" 6	5,380	780
	Simazine 1	5,860	860
	" 3	3,830	660
Wesbrook	Control	4,950	1,540
	Atrazine 1	0	0
	" 3	0	0
	" 6	0	0
	Simazine 1	1,720	300
	" 3	0	0

a.i. = active ingredient

COMMENT:

- Blackleg disease was severe and unfortunately the triazine resistant SRS 82-1 succumbed and lodged badly after flowering. None the less it is clear from the experiment that the triazine resistant line was not affected by atrazine rates as high as 6 kg/ha a.i. (12 L/ha product) while excellent weed control was obtained with 1 kg/ha atrazine a.i. The susceptible rapeseed line was completely wiped out by the lowest rate of atrazine.
- During early vegetative growth a difference in vigour was observed. The later maturing triazine resistant SRS 82-1 was less vigorous than Wesbrook however this difference was not evident in dry matter production at anthesis.



3. The possibility of the triazine resistance character conferring a detrimental effect on the yield potential of lines carrying the character has yet to be resolved.

RAPESEED WINDROWING - TIME OF HARVEST

TRIAL NO: 83MA9 FILE: 4033EX

AIM: To compare the yield of windrowed and direct harvested Wesroona rapeseed harvested at three dates.

LOCATION: Frankland - C. Brown

SOIL TYPE: Loam HISTORY: Pasture

DATE SOWN: July 14

DETAIL: Site topdressed with Superphosphate at 100 kg/ha presowing. Seed (at 5 kg/ha) sown mixed with Agras No. 1 (at 100 kg/ha) from fertilizer box of combine. Agran 100 kg/ha topdressed August 31. Insecticide misted twice early postemergence to control vegetable weevil (Listroderes obliquus). Windrow plots cut December 1. Plots 4.5 x 100m.

TREATMENTS: Two harvest methods - 1. Windrowed  
2. Direct harvested

Three harvest dates - 1. H1 December 15  
2. H2 January 9  
3. H3 February 2

RESULTS:

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Yield (kg/ha at 8% moisture content)

	Windrowed	Direct harvested
H1	1390	1330
H2	1380	1350
H3	1370	1140

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Thousand seed weight (g dm)

	Windrowed	Direct harvested
H1	3.18	3.21
H2	2.94	3.19
H3	2.83	3.27

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Seed moisture content at harvest (%)

Windrowed

Direct harvested

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H1	4.1	5.2
H2	4.3	3.6
H3	7.1	7.6

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Oil Content (% dry basis)

Windrowed

Direct harvested

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H1	47.6	47.8
H2	47.4	47.8
H3	47.6	47.7

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COMMENT:

1. Weather during the harvest period was characterized by unseasonal rainfall however conditions were not conducive to pod shatter. Consequently crop losses were minor and only small differences were observed between harvest dates and methods.