

Farmer scale canola variety trials in WA, 2004

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KEY MESSAGES

- Canola yields were above the State average in the five trials in 2004, however, there was no substantial yield difference among the varieties tested in this limited data set.
- Over three years of testing, average yield of all varieties, except Tribune, showed similar yield responses to increasing mean site yields (environment).
- Tribune was the only variety to vary its yield response to different environments (high yield in low-yielding sites and low yield in the high-yielding site).

AIMS

To evaluate yield performance of commercial varieties of canola, by conducting farm-scale trials (using 90 – 200 m x 10 – 15 m plots) in the agricultural areas of WA.

METHOD

In 2004, Oilseeds WA conducted eight canola variety trials in the WA wheatbelt with and without fungicide (Jockey) treatment. Each variety was replicated in two plots in 5 trials, but was un-replicated in three trials. At all sites crops were managed following district agronomic practices for TT/IT/conventional canola production. Using conventional farm machinery, five successful trials were harvested by farmers and seed yield was determined using a weigh trailer. Seed samples were analysed by "Infratech" for percent oil and protein content and moisture .

In order to provide a valid (statistical) comparison of variety performance at different locations, yield of each variety was regressed against mean yield of each site (average yield of all varieties) in trials conducted during 2002, 2003 and 2004 . This comparison shows yield response trend of each variety to changing environments (Finlay and Wilkinson, AJAR, **14**, 1963).

RESULTS

2004 Trials

There were only small differences between seed yields of canola varieties in the five trials harvested (Table 1). In this low rainfall season, the early maturing varieties ATR-Stubby and Trigold yielded well and Tribune at the Tunney site. Surpass 501TT consistently had high oil% at all sites, with Tribune, Trigold, ATR-Stubby, AV-Sapphire and AV-Spectrum at individual sites. The application of fungicide seed dressing (Jockey) gave a 12% increase in ATR-Stubby yield at Mingenew site and a 24% yield increase in Surpass 501TT at Wittenoom Hills. At other sites fungicide seed dressing had no effect on, or depressed, yield.

2002 - 2004 Trials

The Figure 1 shows that yields of canola varieties are similar to the site yield. For a site yield of 1 t/ha, eight varieties yielded between 0.6 and 1.4 t/ha, while at a site yielding 2 t/ha, the yield of varieties ranged between 1.9 and 2.2 t/ha

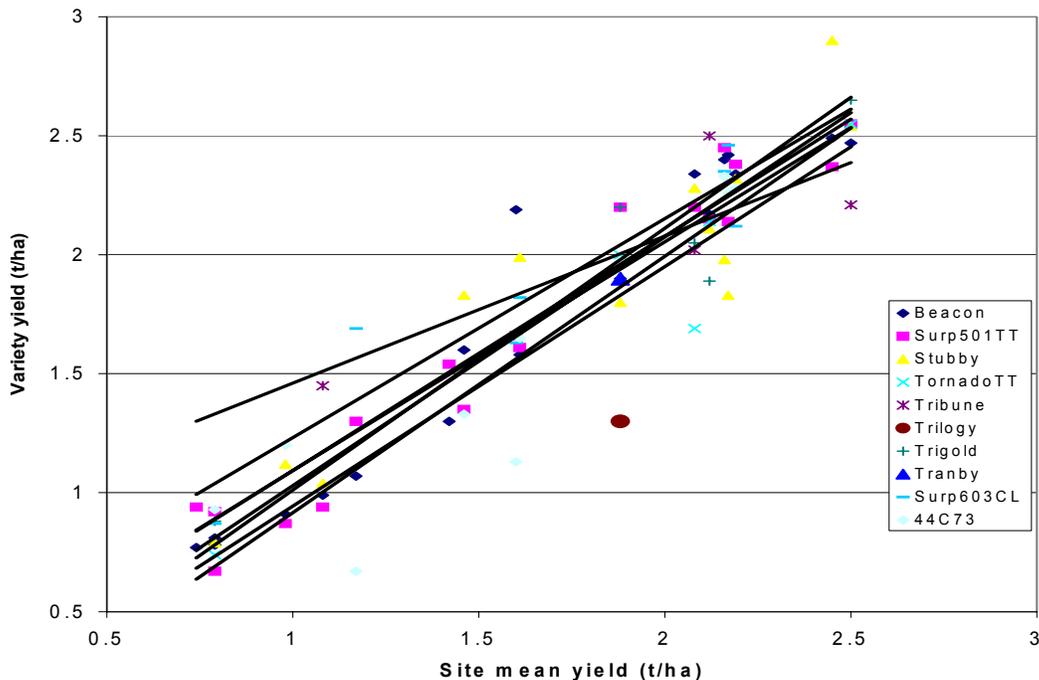


Figure 1. Regression of average yield of variety against average yield at each site.

CONCLUSION

Favourable climatic and edaphic conditions which promoted above average yield production in these trials and some expected spatial variations within farm-scale plots seems to be the factors which masked yield differences in a range of canola varieties tested in this study. Yield responses of the new canola variety Tribune to low and high yielding environments indicate that this variety is produced to cope with conditions in lower rainfall, lower yielding environments. In areas where it is likely that the conditions will favour blackleg disease infection, application of a fungicide is useful to assure a reasonable crop production.

KEY WORDS

Canola, farm-scale, fungicide, variety, yield

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Table 1: Average yield (t/ha) and oil% for farmer cooperative canola variety trials in 2004.

Variety	Mingenew	Williams	Oil%	Boyup Brook	Oil%	Tunney	Oil%	Wittenoom Hills	Oil%
ATR-Beacon	1.9	2.5	45.1	2.3	43.3	2.2	41.2	0.8	39.0
Surpass 501TT	2.2	2.5	45.7	2.2	43.8	2.1	46.1	0.7	43.7
Surpass 501TT+ Jockey	1.9							0.8	44.1
ATR-Stubby	1.8	2.5	43.1	2.3	41.6	2.0	42.7	0.8	41.2
ATR-Stubby+ Jockey	1.9	2.5	46.6	1.9	42.6			0.8	40.6
ATR-Stubby+ Jockey + Gaucho	2.3		44.2	1.9	43.0			0.8	38.4
ATR-Stubby+ Jockey + Cosmos	2.7		43.9	2.1	42.9			0.8	38.4
ATR-Stubby + KSX 18,25	1.8								
Tornado TT	2.0	2.5	44.7	1.7	41.5	2.1	43.7	0.7	40.0
Tornado TT + Jockey	2.0								
Tribune		2.2	45.7	2.0	45.0	2.5	42.4		
Trilogy	1.3								
Trigold	2.2	2.6	44.4	2.0	44.0	1.9	42.8	0.9	39.8
Tranby	1.9					2.3			
Surpass 603CL								0.9	43.8
44C73								0.9	40.9
Rainbow						2.0	42.8		
AV-Sapphire						2.1	45.5		
AV-Spectrum						2.4	44.6		
Hyola 61						1.9	43.5		
Hyola 43						2.1	47.2		
Site mean	1.9	2.5		2.1		2.1		0.8	

Oil% calculated at 6.0% seed moisture