

Evaluation of chinoli rapeseed (*brassica campestris*)

M.S. Srinivasa Rao and N.J. Mendham

University of Tasmania, Hobart, 7001.

Cooler environments were shown to give high yields of *Brassica napus* cultivars of rapeseed (1), (2), where seed survival in cultivars such as Marnoo was a key factor in high yield potential. However, a robust early maturing type is required to extend the crop into the main cereal growing areas of Australia. "Chinoli", bred by Dr. N. Thurling, University of Western Australia, appeared to be such a type as it combines the vigorous winter growth and early flowering of Chinese mustard (*B. campestris* spp. *chinensis*) with the oilseed characteristics of Canadian Canola cultivars.

Methods

Ten lines of Chinoli, together with two *B. napus* (Marnoo and RUE) and one *B. campestris* (Jumbuck) control were compared in a preliminary experiment sown 20 May 19g3 at Cambridge, Tasmania. Plots were 8m with three replications. At final harvest 0.5m samples were taken from each plot to estimate yield components.

Results and Discussion

The Chinolis were all similar and clearly more vigorous in winter growth than RU1 which also has Chinese parentage. All these lines grew more rapidly and flowered earlier than Marnoo or Jumbuck (Table 1). Water stress developed in all crops in the late flowering stage, when seeds on earlier formed pods are most likely to abort (3). Seed abortion was very obvious on all the *B. campestris* lines at this time and is clearly reflected (Table 1) in both the final seed numbers per pod and number of unproductive (seedless) pods.

Table 1. Flowering time. seed yield and yield components

Line	Days to 50% flowering	Seed yield (t/ha)	No. of pods $m^{-2} \times 10^{-3}$ product-ive unprod-uctive		No. of seeds per pod	Mean seed wt. (mg)
Chinoli (mean)	116	1.43	7.07	3.34	9.3	3.6
Jumbuck	124	1.42	8.47	4.33	7.6	2.8
RU1	119	2.91	7.07	1.72	12.6	4.3
Marnoo	130	3.14	8.14	2.92	14.3	4.1
LSD (5%)	-	0.51	2.51	0.90	3.2	1.0

This loss appeared to be compounded in the Chinolis by lodging during pod development, as the stems were observed to be weak on these well grown plants. Lodging also prevented useful expression of another feature of the Chinoli, "erect pods", which in unlodged crops should give better distribution of solar radiation, analogous to erect leaved cereal crops. Yields of the Chinolis were therefore no higher than Jumbuck and only half that of *B. napus* lines. Further work is in progress to remedy the defects in Chinoli, by selection (Dr. Thurling) or management, for example by using plant growth regulators or Low plant densities.

1. Mendham, N.J. and Russell, J. 1982. Proc. 2nd Aust. Agron. Conf., Wagga Wagga, p. 230.
2. Mendham, N.J., Russell, J. and Buzza, G.C. 1984. J. Agric. Sci. Camb. (in press).
3. Mendham, N.J., Shipway, P.A. and Scott, R.K. 1981. J. Agric. Sci. Camb. 96, 389-416.