## Response of rapeseed to early windrowing

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Windrowing rapeseed before the pods are dry can reduce pre-harvest shattering and reduce the anxiety associated with harvesting large areas during the naturally rapid drying cycle. A study in central western N.S.W. with support from the Australian Oilseeds Research Committee studied the effect of time of windrowing on the yield components of rapeseed with the aim of determining criteria by which farmers could recognize the time to begin windrowing.

## Methods

The *Brassica napus* variety Marnoo was sampled 9 times at Condobolin in 1981 and 6 times at Forbes in 1983 between the end of flowering and harvest maturity. At each sampling time, 4 quadrats (each 1m<sup>2</sup>) were cut by hand and the stage of crop development was described in terms of mean seed moisture content (m.c.) and seed colours. Half of each quadrat was oven dried at the time of sampling to determine seed size and yield development and the other half was left in the field to dry then measured for seed size and yield.

## **Results and Discussion**

Mean seed m.c. fell at the rate of 2 percentage points per day from 80%, when 95% of plants had finished flowering (EF 95), to 10%, at harvest maturity 35 days later. This trend was consistent for both crops, despite a 10 day difference in the dates of EF 95 (Oct. 2, 1981 and Oct. 12, 1983). The proportion of seeds which had turned their mature colour increased at the rate of 8 percentage points per day from 10%, 18 days after EF 95, to 90%, 28 days after EF 95. This trend also correlated well with seed m.c. which fell from 50% to 28% in that same period. Seed m.c. is not an easy farmer measurement in that range, so seed colour and days after EF 95 are good measures of crop development.



Rutherglen bug attacked the samples left in the field in 1981 causing a reduction in seed size, oil content and yield from some sampling times.

In 1981, yield based on oven dried samples, rose at the rate of 56kg/ha/day until 24 days after EF 95, at which stage 44% of seeds had turned black and seed m.c. was 40%. After that, the yield stabilized at I.4t/ha.In 1983, yield of both oven- and field-dried samples rose at the rate of 100kg/ha/day until 22 days after EF 95 (25% of seeds turned black and seed m.c. of 46%). After that, yield based on the oven dried samples continued to rise but yield of field dried samples stabilized at 2.7t/ha due to a reduction in seed numbers and a continued rise in seed size. This suggests shattering rather than rutherglen bug damage in the field in 1983.

The trends indicate that windrowing too early causes massive yield losses due to incomplete seed development. The stage for safe commencement of windrowing of Marnoo in central western N.S.W. is at 23 days after EF 95, 40% seeds turned black and a mean seed moisture content of 40%.