possible after treatment. With this 'chemical fallow' higher yields will be obtained than on normal fallows provided other species, such as grasses, do not become a problem. The reduction in the number of cultivations will partly offset the cost of chemical and may also lessen the problem of soil drift.

COMPARISON OF DI-ALLATE AND BARBAN FOR CONTROL OF WILD OATS IN WHEAT

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Wild oat competition in wheat crops can account for substantial yield reductions in localized areas of the major wheat-growing districts of Victoria. Two forms of selective chemical treatment commercially available are pre-emergence control with di-allate or tri-allate and early post-emergence control with barban. The results of experiments comparing di-allate and barban for wild oat control in wheat are discussed in this paper.

The experiments were conducted in the Wimmera and north-east districts on farmers' properties covering a range of soil types and wild oat populations. All experiments were randomized blocks with from 4 to 6 replicates and included some or all of the following treatments - di-allate, 8, 16 oz a.i. per acre (0.56, 1.12 kg a.i. per hectare) applied just before or just after sowing and incorporated with heavy harrows, and barban, 2.5, 5.0 and 10.0 oz a.i. per acre (0.17, 0.35, 0.70 kg a.i. per hectare) applied when wild oats had 1½-2½ leaves and wheat generally had 2-2½ leaves. An unsprayed control was included in each experiment. The variety Olympic was sown.

Yield data from six sites where all of the above rates of both herbicides were compared are shown in the following table:

TABLE

Average	Average Yield Response - bus/ac (kg/ha						
	Barban oz a.i. per ac* (kg a.i. per ha)			Di-allate oz a.i. per ac (kg a.i. per ha)			
	2.5 (0.17)	5.0 (0.35)	10.0 (0.70)	8.0 (0.56) j.b.s.	16.0 (1.12) j.b.s.	8.0 (0.56) j.a.s.	16.0 (1.12) j.a.s.
Northern (4 sites)	5.1 (3.4)	1.3 (0.35)	-2.1 (1.4)	7.1 (4.8)	7.1 (4.8)	3.9 (2.6)	6.4 (4.3)
Wimmera (2 sites)	4.3 (2.9)	-1.0 (-0.7)	-3.0 (2.0)	7.6 (5.1)	7.6 (5.1)	5.7 (3.8)	9.2 (6.2)

j.b.s. = just before sowing
j.a.s. = just after sowing
* Applied at wheat 2-2½ leaf stage

Better yield improvement due to control of wild oats was obtained with di-allate, and the highest economic return was obtained from 8 oz a.i. per acre (0.56 kg a.i. per hectare) of this material applied just before sowing. The most effective barban treatment was 2.5 oz a.i. per acre (0.17 kg a.i. per hectare). The commercial recommended rate of 5 oz a.i. per acre (0.35 kg a.i. per hectare) of barban was not a payable proposition.

In nearly all experiments, di-allate at 8 oz a.i. per acre (0.56 kg a.i. per hectare) gave an economic response, but only in 7 out of 12 did barban 2.5 oz a.i. per acre (0.17 kg a.i. per hectare) prove profitable.

THE WILD OAT PROBLEM IN NEW ZEALAND

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Both *Avena fatua* L. and *A. persica* Steud.)syn. *A. ludoviciana* Dur.) are present in New Zealand and referred to collectively by the standard common name 'wild oat' though *A. persica*, first