Seed yields were significantly increased following autumn application of asulam and the harvested sample was cleaner than where there had been no spraying. However, while spring applications were found to be more active ounce for ounce than autumn ones (being in general terms about twice as active, particularly against *Holcus lanatus* and *Rumex* spp.), spring applications proved too phytotoxic at all dose rates evaluated, as they significantly reduced yields.

Germination was not affected by any asulam treatment.

In all, the results were sufficiently encouraging for further trials to be carried out in ryegrass seed crops next season.

NEW HERBICIDES FOR CONTROL OF WIMMERA RYEGRASS IN WHEAT

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Wimmera ryegrass (*Lolium rigidum*) is a serious weed of wheat crops in Victoria. Although reasonable pre-emergence control of this weed can usually be obtained with the use of di-allate, this chemical suffers from a number of disadvantages, including the need for immediate incorporation into a fine, level seedbed and a lack of activity on broadleaf weeds and on other grasses which sometimes occur with Wimmera ryegrass. Furthermore, pre-emergence herbicides do not usually find ready farmer acceptance as they are applied to seemingly weed-free areas.

During the period 1965-1970, a range of herbicides has been evaluated at Rutherglen Research Station for either pre- or post-emergence ryegrass control in wheat, or possibly both.

Pre-emergence	Post-emergence
Alachlor	Chlorthiamid
VCS438	Dichlobenil
Linuron	Diuron
Dichlobenil	Isonoruron

Pre-emergence	Post-emergence
SD11832	Buturon
Sindone B	Linuron
Trifluralin	Metabromuron
CP52223	PP493
	Nitrofen
	Barban

Pre-emergence materials were applied immediately after planting the wheat and incorporated with heavy harrows where necessary. Post-emergence treatments were applied when wheat had three to four leaves and ryegrass generally had one to two leaves.

The experiments included several rates of the materials, and their effectiveness was compared against di-allate and an unsprayed control. Observations were made on crop damage and ryegrass populations after spraying, and grain yields were obtained.

Of the pre-emergence herbicides tested,Alachlor applied at 16 oz a.i. per acre (1.12 kg a.i. per hectare) and VCS438 at 16 oz a.i. per acre (1.12 kg a.i. per hectare) show the greatest promise. Neither of these materials need soil incorporation, and both have produced significant grain yield increases over the unsprayed control in situations where di-allate has been inefficient. VCS438 also has a marked suppressing effect on young, emerged ryegrass which may be present on the soil surface after sowing. Of the other herbicides tested, linuron, dichlobenil, Sindone B, and SD11832 have all caused crop damage to some extent, with consequent depressions of grain yield, dichlobenil being particularly severe.

Selective post-emergence control of ryegrass in wheat has not been easy to obtain and, of the range of herbicides tested, only diuron and isonoruron show promise. Chlorthiamid at high rates of application has given inconsistent control at the wheat three-leaf stage. In a dense ryegrass situation in 1969, isonoruron applied at 16 oz a.i. per acre (1.12 kg a.i. per hectare) increased yield from 4.6 bus. per acre (310 kg per hectare) on the unsprayed control to 15.3 bus. per acre (1030 kg per hectare). However, the margin of selectivity with both isonoruron and diuron is only small and more testing is required with both materials.