A POPULATION OF WILD OATS (*AVENA STERILIS*) RESISTANT TO THE GRAMINICIDE HALOXYFOP-METHYL

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Abstract. Patches of wild oats from a clover seed paddock near Bordertown, South Australia, were not controlled in 1989 by 52 g. a.i./ha haloxyfop-methyl (Verdict, 500 ml/ha). In glasshouse studies, wild oats from an adjacent paddock were completely controlled by 13 g. haloxyfop-methyl/ha (125 ml Verdict/ha) whereas the accession that survived halxoyfop-methyl in the field exhibited no mortality in the presence of 416 g. haloxyfop-methyl/ha (4 l Verdict/ha). It is concluded that the accession is resistant to haloxyfop-methyl. According to the farm records the paddock from which the resistant material was collected had been exposed in the past to trifluralin 4 times, diclofop-methyl 3 times, fluazifop-butyl 3 times, glyphosate once and triallate once but had never been exposed to haloxyfop-methyl. Not only is this is the first report of a haloxyfop-resistant wild oats but the accession is unusual in that resistance has developed in the absence of any prior exposure to the herbicide.

The resistance of the wild oat accession to a number of aryloxyphenoxypropionates but not to a number of cyclohexanediones will be discussed.

BIPYRIDYL HERBICIDE RESISTANCE IN BARLEY GRASS (*HORDEUM LEPORINUM*) AND SILVER GRASS (*VULPIA* SP.)

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Abstract. Resistance to the bipyridyl herbicides, paraquat and diquat, has been reported in three weed species in Australia. These three species are *Hordeum glaucum* (1), *Hordeum leporinum* (4) and *Arctotheca calendula* (2). All these three resistant weed biotypes are in one area of Victoria and infest lucerne fields with a long history of paraquat-diquat use (3).

Populations of *Hordeum leporinum* from two separate lucerne fields in Tasmania are also under investigation. The two lucerne fields have been sprayed annually with the bipyridyl herbicides for 12 years and 25 years, respectively. In 1989, control of these populations with bipyridyl herbicides, paraquat and diquat, was no longer effective. Results to be presented document that these populations are also resistant to paraquat. The levels of resistance to the bipyridyl herbicides (particularly paraquat) on the populations from Tasmania and one population from Victoria will be compared.

A *Vulpia* sp., is also being investigated for resistance to bipyridyl herbicides, because the bipyridyl herbicides paraquat and diquat no longer give satisfactory control of this species in one of the fields under study.

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