WEED CONTROL IN AGRICULTURAL CROPS IN VICTORIA

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In Victoria, the main agricultural crops comprise the winter cereals, wheat, oats, and barley; the oilseeds, rapeseed, linseed and safflower; and tobacco. Estimated acreage sown to each in 1970 and the percentage change from 1969 are:

	Estimated Area 1970 (1,000 ac.)	Per cent Change from 1969
Wheat	1,850	-45
Oats	1,550	+30
Barley	750	+50
Rapeseed	70	+540
Linseed	16	-27
Safflower	13	*
	Area 1969 and 1970	
Tobacco	10,700 ac.	

*Negligible area in 1969.

Weeds are a major factor in the production of these crops as costs are increased either directly due to the cost of control measures, or indirectly due to the loss of yield and quality of product resulting from competition and contamination. These costs are estimated to average $2 an acre over the whole area sown to the above crops, all of which, with the exception of tobacco, are grown under natural rainfall conditions.

CEREALS

Cultivation and management methods still give the most effective control of weeds in cereal growing consistent with economic considerations. Spraying fills a valuable supplementary role, but its value is frequently reduced to a varying degree owing to the difficulty of deciding whether spraying is going to be profitable. Farmers are therefore vulnerable to pressures from active advertising and other promotion of chemical products.

About 75% of the wheat crop is sown on a long (winter-spring) bare fallow, the object of which is to conserve moisture and

adequate opportunity for pre-sowing cultivation, there may be less need for spraying to control weeds. There is, however, a large seasonal variation in area sprayed, estimated to range between 10 and 20% of the wheat crop and a much smaller percentage of the oats and barley.

The main weeds in cereal crops in Victoria are - wild turnip (*Brassica tournefortii*), mustard (*Sisymbrium orientale*), yellow iron weed (*Amsinckia* spp.), fumitory (*Fumaria* spp.), deadnettle (*Lamium amplexicaule*), white iron weed (*Lithospermum arvense*), hogweed (*Polygonum aviculare*), skeleton weed (*Chondrilla juncea*), Wimmera ryegrass (*Lolium rigidum*) and wild oats (*Avena fatua*).

While 2,4-D held its place as the most widely used herbicide on cereals, the pre- and post-emergent herbicides used to control wild oats and Wimmera ryegrass and the early post-emergence types for broad-leaf weeds (bromoxynil, bromoxynil + M.C.P.A., Linuron and prometryne) were claiming a growing share of the market until the advent of wheat quotas in 1969.

Wheat quotas had an immediate and adverse effect on weed control practice. With areas sown generally much greater than were needed to fill quotas and a natural reaction to try to reduce cash outlays, many growers saved the cost of spraying. One-third of the 1970 quota was delivered as overquota wheat from 1969, which reduced the area needed to fill the 1970 quota of 52 million bushels. A return to more normal practice is expected in 1971, when areas are likely to be stabilized.

Research has made a valuable contribution to weed control in cereals in Victoria. Early research with di-allate on wild oats led to the discovery that this chemical could also control Wimmera ryegrass. *Amsinckia* spp. are no longer a major problem, partly as a result of intensive research by Government Departments and chemical companies. In conjunction with this research, much data has been obtained on use of the early post-emergence herbicides. Research on skeleton weed control has shown the importance of competing pasture legumes, particularly lucerne.

Through effective extension, adoption has followed closely on research findings. Particular emphasis is given to the economics of herbicide usage. Wimmera ryegrass, wild oats, *Amsinckia* spp. and skeleton weed have been shown to be strong competitors, but the economics of spraying other broad-leaf weeds, particularly with the early post-emergence chemicals, are not well established. Under a wheat quota system, the spraying of crops may not be economic unless the land saved is used for another payable enterprise.

OILSEEDS

Only a small percentage of the linseed crop is sprayed. Di-allate and 2,4-D are most commonly used, but trifluralin has given good control of canary grass (*Phalaris minor*).

Rapeseed and safflower are relatively new crops, which for obvious reasons present particular problems in post-emergence weed control. Rapeseed is a good competitor, but the slow growth of winter-sown crops of safflower makes them vulnerable to strong weed competition.