CONTROL OF ITALIAN ARUM

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Summary

Brief results are presented of trials testing a variety of herbicides for control of Italian arum (*Arum italicum*). Only one chemical, picloram, when applied twice at yearly intervals gave worthwhile results.

INTRODUCTION

ITALIAN ARUM (*Arum italicum*) is not a serious weed in that it occupies small areas in New Zealand and spreads slowly. In recent years, however, it has occasioned some concern because there appeared to be no practical method of control.

Although seldom grown now in gardens, *Arum italicum* where it occurs as a weed has almost certainly originated as a garden escape for most infestations are found in the neighbourhood of old gardens and orchards. From these sites the plant spreads inexorably though slowly out into pastures, particularly along fence-lines and under hedges and shelterbelts. It is logical to assume that one of the main dispersal means is by seed, for household poultry, particularly turkeys, feed readily on the red berries which are produced in late winter.

The plant is a summer dormant perennial, attractive variegated leaves emerging from the underground bulbs in late autumn each year. Full-sized bulbs appear to be only an inch or so in diameter and are found 4 to 6 in. deep in the soil. Flowers appear in late winter and spring and have the appearance of a poor relative to the common garden arum, the sheath or spathe being papery yellow-green in appearance and the central spadix bright yellow. Later, clusters of red berries surround the spadix. The plant when mature may be 18 in. in height.

EXPERIMENTAL

1961

In July, 1961, control of this weed was attempted in a large infestation in a grazed orchard near Tirau. The weed was in full leaf and commencing to flower. In this trial and in all subsequent trials unless otherwise stated, all treatments were applied by a small garden sprayer with a fine hollow cone nozzle in one pint of carrier per plot (20 gal per acre), plots being $^{1}/_{160}$th acre in size. The 1961 trial was unreplicated. Treatments, expressed as active ingredient per acre, were:

2,3,6-TBA	2 lb and 10 lb
Fenac	3 lb and 6 lb
2,2-DPA/fenoprop mixture	3 lb and 6 lb
Butoxy-ethanol ester of 2,4-D (oil conc.)	1 lb and 2 lb

All treatments except 2,4-D severely checked the above-ground growth but full recovery occurred within six months. Lasting damage to the associated pasture occurred only in the 2,2-DPA/fenoprop plots where

weeds and bare ground accounted for 80% of the area between weed patches six months after treatment.

1962

A further series of chemicals was tested in September when the following treatments were supplied:

Dichlobenil	5 lb and 10 lb
Diquat	4 lb
2,3,6-TBA	30 lb
Eptam	16 lb
Fenuron pellets	1.42 and 2.84 grams per plant

The fenuron was applied by hand, more accurately to a small clump of plants about 6 in. × 6 in. than to an individual plant. Treatments were replicated.

A severe check to growth occurred on the diquat and 2,3,6-TBA plots and a slight check occurred on the other plots. Inside twelve months, however, a full recovery had occurred on all plots except the diquat plot which exhibited retarded growth after recovery the following autumn.

1963

The following unreplicated treatments were applied to further plots on August 23:

Paraquat	3 lb
Diquat	3 lb
PP 831	3 lb
Metam	300 lb
Dicamba	20 lb

and on September 2:

Picloram	3 lb

Metam was applied by knapsack and washed in with 25 gal water per plot (3,750 gal water per acre).

All chemicals checked the weed but full recovery occurred on all plots except the picloram plot within twelve months. The weed on this plot was retarded in growth in season following treatment. Diquat was disappointing this year, recovery being nearly complete within twelve months.

1964

A replicated trial was laid in November involving the following treatments:

Diquat	2 lb and 5 lb
Picloram	5 lb

Diquat gave a rapid foliage knock-down but in the following season's growth there appeared to be only a slight check at the 2 lb rate and a more severe check at 5 lb.

Picloram also gave a severe initial check and, in the following season's regrowth, Italiam arum was still stunted and distorted in appearance. The clumps of weed appeared to have visibly thinned in density. No clover was present between weed patches but grasses did not appear to be affected.

1965

In July the plots treated in 1964 were re-treated with the same chemicals at the same rates.

This second treatment with picloram succeeded in reducing the infestation by an estimated 70 to 80%, patches being replaced by scattered plants only. Individual plants were stunted and distorted twelve months after treatment. Diquat treated plants were smaller and less vigorous than control plants but there did not appear to have been any mortality.

Preliminary results indicate that picloram is a promising material for treatment of Italian arum. Further work is needed to test granulated preparations of picloram and to investigate optimum times for treatment.