

Wild Oats Control

A PROGRESS REPORT

By Charles R. Swanson¹ and E. A. Helgeson²

Selective control of broadleaf weeds in growing crops has become an established agricultural practice since the introduction of 2, 4D. Many noxious weeds are relatively easily controlled with this herbicide. However, a large number of weeds are largely unaffected by 2, 4D. Of particular interest are the annual grass weeds such as green and yellow pigeon grass, barnyard grass and wild oats, which are of considerable importance in flax, soybeans, sugar beets and various vegetable crops.

Trichloroacetic acid (TCA) has shown some promise in the selective control of the pigeon grasses and barnyard grass in certain crops, but wild oats are notably resistant to TCA. With this in mind, field and greenhouse investigations have been initiated to find a means of chemical control of wild oats. This paper presents the results of some preliminary greenhouse experiments on the effects of two formulations of disodium 3,6-endoxohexahydrophthalate on the growth of wild oats.

Ordinary greenhouse flats were filled with Fargo clay soil and 150 wild oat seeds were planted in each. When the seedlings averaged two inches in height, duplicate flats were sprayed with 1.5, 3 and 6 pounds per acre of the active ingredient of each formulation.

The two chemicals used were:

ME 3003—25% aqueous solution of disodium 3,6-endoxohexahydrophthalate

ME 3001—16% disodium 3,6-endoxohexahydrophthalate and 84% ammonium sulphate

For the sake of brevity, the commercial designations of ME 3003 and ME 3001 will be used in referring to the two formulations.

No immediate effects were noted from application of any rate of either formulation. Two days after spraying, however, the leaf tips of treated plants appeared brown and dry. The degree of injury was approximately proportional to the rate of application. The data presented in Table I show progressive decreases in the number of surviving plants and in the green weight of the shoots with increase in rate of application, and also show the greater effect of ME 3001 in suppressing growth of wild oats. Figure 1 indicates the density of growth of an untreated flat, while Figure 2 shows the effect of post-emergence application of 6 pounds per acre of ME 3001.

The results of this study and some work in the field during the summer of 1950 indicate that the endoxo compounds may help to control wild oats as well as other annual grass weeds. It must be kept in mind, however, that the data obtained thus far are preliminary, that only one season's results are at hand, and that the tolerance of crop plants to this chemical has yet to be tested.

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Table I. STAND AND GREEN WEIGHT OF WILD OATS SPRAYED WITH TWO FORMULATIONS OF DISODIUM 3,6-ENDOXOHEXAHYDRO-PHTHALATE.

Treatment	Number of plants per flat	Green weight of shoots per flat (gms.)
Untreated	139	36.5
1.5 lbs. acre/ME 3003	137	32.2
3 lbs. acre/ME-3003	129	23.9
6 lbs. acre/ME 3003	114	13.6
1.5 lbs. acre/ME 3001	110	19.7
3 lbs. acre/ME 3001	100	17.1
6 lbs. acre/ME 3001	73	9.9



Fig. 1. Untreated control flat of wild oats.

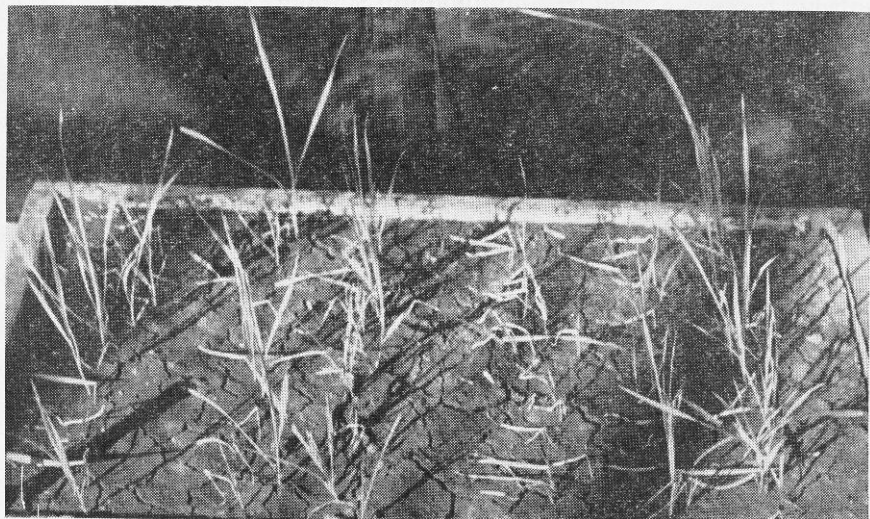


Fig. 2. Wild oats flat sprayed with 6 pounds per acre ME 3001 when plants were two inches tall.