

SWEET BRIER CONTROL

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Summary

Results of chemical control experiments involving sweet brier (*Rosa rubiginosa* syn. *eglantaria*) conducted in Canterbury from 1958 to 1962, were reported by Dingwall (1962). The present notes relate more specifically to trials current since 1961. Included are references to the benzoic acid derivatives, 2,3,6-TBA and dicamba, and the more recently heralded, picolinic acid derivative, "Tordon"*. Assessment of the relative effectiveness of TBA and dicamba is now possible. The short time lapse since "Tordon" first became available in this country precludes, as yet, any definite conclusion regarding the merits and practical significance of this new material in solving the brier problem.

OUTLINE OF TRIALS

THE RESULTS of ten experiments are summarized in these notes. Six of the trials were mainly concerned with coverage sprays and the remaining four with basal applications. One of the basal trials was established by D. Reynolds who compared the technical acid of 2,3,6-TBA at 1, 2 and 4 grams per plant with amine salt 2,3,6-TBA solutions (1:40) at 1½ and 3 pints in a December application.

The first experiment including "Tordon" was established by W. Leonard in April, 1963, as a coverage spray and rates equivalent to, 0.72, 1.44 and 2.88 lb acid equivalent per acre. He followed up this initial experiment with a more comprehensive, "Rates and Times of Application" series commencing in October, 1963, with applications at monthly intervals. The same rates of "Tordon" as used in the initial trial were again employed with the addition of treatments including combinations of "Tordon" and of the butyl ester of 2,4,5-T at 0.72 plus 3 lb and 1.44 plus 2 lb, respectively.

C. C. McLeod also commenced a coverage spray trial in March, 1964, to compare "Tordon" at 2.9 lb with 2,4,5-T at 4 lb and the mixture, "Tordon"/2,4-D at 0.72 plus 4 lb.

The remainder of the trials were conducted by the writer employing coverage spray treatments with 2,3,6-TBA and dicamba, dilution rates 1:20 to 1:60; fenoprop (1:66); 2,4,5-T (1:40 to 1:60) and "Tordon" (1:50) — all at from 2 to 3 pints of solution per plant. Applications were made during the October to January period. One trial involved a respray treatment and another compared the spraying of regrowth from cut stumps with treatment of uncut, mature bushes.

In the basal applications, solutions of concentrate 2,4,5-T-in-oil (1:80); the amine salt of 2,3,6-TBA (1:25); dicamba (1:50) and "Tordon" (1:20) — all at 1 pint per plant — were compared with fenuron pellets (25%) at 1, 2 and 3 oz; 2,3,6-TBA granules (5%) at 7 oz; polychlorobenzoic granules at 2 and 3 oz; prometon (powder)

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at 1¼ and 2½ oz and "Tordon" pellets (7.2%) at 1 and 1¾ oz per plant. Two of these trials were established in September, 1963, and the third in January, 1964.

RESULTS

COVERAGE SPRAY TRIALS

The two benzoic acid derivatives, 2,3,6-TBA and dicamba, proved more reliable than 2,4,5-T and fenoprop as coverage sprays, but not sufficiently reliable to live up to their earlier promise. In one trial, dicamba which killed 3 out of 5 plants in an initial application, failed to kill the remaining 2 plants with a repeat application, whilst in a small-scale block trial neither dicamba nor 2,3,6-TBA was significantly better than 2,4,5-T or fenoprop.

In the respraying of regrowth on cut stumps, dicamba (1.75 lb) with a 95% suppression of plants was better than fenoprop (90%) and significantly better than 2,3,6-TBA (75%) and 2,4,5-T (less than 50%). All were applied at 4½ lb active ingredient per acre to uncut growth and 1.4 lb active ingredient per acre to cut stumps (except dicamba).

With the possible exception of Leonard's April, 1963, trial, the results from "Tordon" can only be assessed on the basis of interim reports.

However, in this April trial, after one year's observations, "Tordon" at the higher rate (2.9 lb) has proved fatal to 4 out of five plants. The intermediate rate (1.44 lb) has killed 3 plants and the low rate (0.72 lb) 2 plants. In the "Rates and Times of Application" series the fate of plants treated with the 1.44 and 2.9 lb rates of "Tordon" in October to December applications appears as if it might be similar to or even better than the results achieved in the autumn treatment.

It is as yet too soon to evaluate the relative effectiveness of the "Tordon" mixtures with 2,4,5-T and 2,4-D.

BASAL APPLICATIONS

Both 2,3,6-TBA and dicamba have proved relatively efficient and reliable as basal applications—at dilutions of 1:20 to 1:40 in water—but not more so than concentrate 2,4,5-T-in-oil (1:60 to 1:80). Application rate needs to be 1½ to 2 pints per plant for average-sized bushes.

Fenuron pellets (25%) at 2 to 3 oz per plant are effective under suitable conditions of soil moisture and more especially on gravelly sites. They have proved somewhat unreliable if application is followed by prolonged hot, dry, sunny weather. The 2,3,6-TBA granules have also proved unreliable in two trials.

Trials with granulated or powder forms of polychlorobenzoic acid, prometon and "Tordon" are too recent for definite assessment, but interim results indicate that "Tordon" (7.2%) at 1 and 1¾ oz and prometon at both 1¼ and 2½ oz will prove effective.

The 1:20 solution of "Tordon" at 1 pint per plant on small- to medium-sized bushes also looks decidedly promising.

CONCLUSIONS

From trials to date, it is concluded that, though 2,3,6-TBA and dicamba—because of their powers of translocation—are relatively more efficient than 2,4,5-T as coverage sprays on sweet brier, their herbicidal efficiency is not sufficiently strong to ensure reliable results.

"Tordon" which also translocates in sweet brier — as demonstrated by the "tip immersion" technique — has evidenced distinct potentialities as an efficient coverage spray. For basal applications, no materials have proved more efficient nor more reliable than concentrate 2,4,5-T in oil though satisfactory results are obtainable also with 2,3,6-TBA and dicamba in water and, in limited circumstances, with fenuron pellets. Prometon may also prove satisfactory as a basal applicant though the triazines have not proved satisfactory as coverage sprays.

"Tordon" solution and pellets may prove equally as effective and reliable as the best of all the other herbicides giving satisfactory control with basal applications.

REFERENCE

Dingwall, A. R., 1962: *Proc. 15th N.Z. Weed Control Conf.*, p. 29.

ERRATUM

On the previous page, the first line should read as follows:
at 1 and 2 oz and "Tordon" pellets (7.2%) at 1¼ and 2½ oz per plant

The lines concluding the third paragraph under "Basal Applications" should read as follows:

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