THE ERADICATION OF *LEPIDIUM DRABA*¹

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White top, *Lepidium draba* L., is one of the most serious perennial weed pests in Idaho. The weed has spread rapidly during the past few years and now is distributed widely throughout the irrigated areas. Eradication of white top by the usual commercial control methods has met with little success. In certain counties of the state, applications of as high as 8 pounds of sodium chlorate per square rod have failed to eliminate the weed. The use of such amounts of chemical, even though satisfactory kills were secured, is a prohibitive expense except for small areas.

In view of these facts, extensive experiments have been carried on since 1931 in the Boise Valley, near Meridian. Ten acres of alfalfa land, heavily and uniformly infested with white top, were leased for a 4-year period. Six acres of this area were devoted to tillage and smother-crop experiments and the other four to various chemical treatments.

Additional data on the chemical eradication of white top have been secured from experiments in Owyhee and Bear Lake counties. These data show the effectiveness of chemicals under different climatic conditions.

The plats used for all chemical weed work in Idaho were 9 by 30 feet. The chlorate applications were made with a pressure sprayer equipped with suitable spray nozzles and a sediment filter. Calcium chlorate and ammonium thiocyanate were applied with the same equipment. A pointed, iron rod, ¾ inch in diameter, was used in punching the holes in the soil for the carbon bisulfide treatments. This chemical was poured into the holes through a half-inch iron pipe with a funnel welded to the upper end. A measuring device, holding the exact amount of chemical needed per hole, was suspended in the funnel.

A 10-foot duckfoot cultivator with 18-inch sweeps and a rotary rod weeder were used to keep down the aerial growth of the white top during the tillage season. The other cultural work was done with the usual farm equipment.

EXPERIMENTAL RESULTS

CHLORATES

Preliminary investigations with white top showed that better kills had been obtained when chlorates were applied in two applications. In order to secure accurate information upon this method, 60 plats were sprayed with initial applications of 1, 2, and 3 pounds of chlorates per rod. Both sodium and commercial calcium chlorate were used on mowed and unmowed areas. Following the initial applications, the

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