Chemical Control of Downy Brome-Grass (*Bromus tectorum* L.) in an Established Alfalfa Field

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Downy brome-grass (*Bromus tectorum* L.), often called wild oats, is a serious problem on the sandy and gravelly soils of southern Michigan. It is especially troublesome in hayfields, more particularly old stands of alfalfa. The plant heads early and develops seed before the first cutting of alfalfa is made. This article reports a study of the seed habits of downy brome-grass and an experiment designed to control the weed by chemicals.

**REVIEW OF LITERATURE**

Megee (2) found that downy brome-grass behaved mostly as a winter annual but that some seedlings are annuals. He further found that the seeds did not germinate in mid-summer, but the seedlings that were not well established by the latter part of October produced very little seed the next season.

Finnerty, Klingman, and Shafer (1) used both TCA and IPC in rates up to 20 pounds per acre in an attempt to control weedy brome-grasses in Nebraska. Control up to about 90% was obtained. Rates which gave 80% or better control reduced the stands of smooth brome-grass from 16 to 93%. No selective control of perennial grasses was seen.

Watson (7) was able to control downy brome-grass in alfalfa fields with sodium TCA applied in the fall at rates of 10 pounds or more per acre. The alfalfa was injured somewhat by high rates applied in the spring.

Shafer (5) sprayed alfalfa for the control of grassy weeds. IPC at 2 and 8 pounds per acre controlled little barley, foxtails, and barnyard grass, but resulted in little injury to the alfalfa.

Miller and Dunham (3) applied TCA and IPC to alfalfa fields in the spring and after the first hay crop. There was little injury to the alfalfa. TCA reduced the foxtail, but IPC was ineffective.

Peters and Willard (4) applied TCA at rates up to 80 pounds per acre on alfalfa, at several times in the year. At higher rates, the alfalfa was injured particularly by applications in summer.

Shafer and Finnerty (6) used IPC as a soil treatment at 3, 6, and 9 pounds per acre on 100 germinating seeds of four different grasses namely: crabgrass, downy brome-grass, yellow foxtail, and hairy chess. Seedling counts were made at two weeks. IPC at 6 and 9 pounds per acre gave kills approaching 100% on all four grasses.