

Chemical Control of Annual Grasses in Alfalfa, Sugar Beets, Onions, and Certain Truck Crops

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Three-Chloro IPC, sodium TCA, and maleic hydrazide (MH30) were field-tested in three areas of Colorado for selective action against annual grasses.

Results with pre-emergence sprays of 3-Chloro IPC on onion seed beds near Greeley showed that one and one-half pounds per acre gave 30-50 percent control of stinkgrass (*Eragrostis cilianensis*), barnyard grass (*Echinochloa crus-galli*), and witchgrass (*Panicum capillare*). The onions showed no injury.

Sodium TCA at 10 pounds per acre gave only 20 percent control of the grasses, and produced severe chlorosis in the onions. The soil was sandy in texture, and moisture abundant. On a heavy clay soil near Fort Collins, 3-Chloro IPC at one and one-half pounds was ineffective, whereas sodium TCA at 10 pounds gave 90-100 percent control. In this treatment, sodium TCA did not injure sugar beets, but did severely injure lettuce, red beets, and cucumbers.

In a later trial on loamy soil, 3-Chloro IPC at six pounds gave 100 percent control of green foxtail (*Setaria viridis*) and 40 percent control of wild oats (*Avena fatua*). Onions, alfalfa, and sweet clover showed no injury, but sugar beets were stunted for a period of four to six weeks. Again moisture conditions were adequate.

In the subnormally dry San Luis Valley, near Center, spring treatments with 3-Chloro IPC, sodium TCA, and maleic hydrazide (the latter post-emergence) were ineffective in the control of wild barley (*Hordeum jubatum*) and volunteer grain in second-year alfalfa pastures. Evidently conditions must be favorable for plant growth before these herbicides can function effectively.

Fall treatments in the same area with 3-Chloro IPC at six pounds, followed by flood irrigation, gave 95 percent control of volunteer oats in five-month-old alfalfa. The alfalfa showed no injury at this rate. Sodium TCA at 10 and 20 pounds gave no control of the volunteer oats. Soil texture varied on the plots from sandy to gravelly. From the results obtained in all three areas it would appear that 3-Chloro IPC is better adapted to lighter-textured soils, and sodium TCA to heavier soils, with both chemicals requiring adequate moisture for efficient results. Maleic hydrazide in greenhouse trials effectively prevented awn formation without leaf-kill in wild barley at one and one-half and three pounds per acre.

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