CRABGRASS IN RELATION TO ARSENICALS

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FOR many years statements pro and con have been made regarding the efficiency of lead arsenate as an agent for the control of crabgrass. Most of these statements were based on observation. Many observations by numerous people were possible because lead arsenate is in common use on golf courses and other places as an agent for the control of grubs. Observations at best, however, are not always dependable. If made under variable conditions or even if under comparable conditions but by different individuals, the possibility of arriving at erroneous conclusions is considerable.

To ascertain if lead arsenate has any merit as an agent for the control of crabgrass, experiments were conducted at the Ohio Agricultural Experiment Station during the period 1930–36, inclusive. Whether lead arsenate may prove to be an effective agent under all conditions remains to be determined. The results to date at Wooster, however, have been promising. It seemed advisable, therefore, at this time to make available the results thus far obtained in the hope that others might be stimulated to make trials to the end that its adaptation and usefulness on different types of soil and under varying conditions might be the more speedily determined. Moreover, the effectiveness of lead arsenate as an agent of control for the Japanese beetle is already accepted and since the presence of this pest is now (1938) recognized in Ohio, any information, particularly with reference to the aftereffect of the arsenates on the desirable turf grasses, is timely.

PRELIMINARY EXPERIMENT

As a preliminary test a single plat, 5 by 20 feet, on the Station campus was treated with lead arsenate July 25, 1930, at the rate of 35 pounds per 1,000 square feet. To facilitate even distribution, the arsenate was first mixed with compost, half-and-half. No injury was observable to the plants that year. In the following summer, 1931, which was a favorable season for crabgrass, it was early apparent that a relatively small number of plants was appearing on the treated plat. On September 14, after the plants had changed color and the identity of individuals, therefore, was the more easily discernible, a count showed a total of 75 on the 100 square feet, 23 of which were close to the margin, where in distributing the arsenate, the workers intuitively shy away lest some of the material be thrown beyond the bounds of the plat. Including the border plants, the reduction amounted to 94.6%, for on an equal area adjoining there were 1,350 plants. The number of crabgrass plants found on this plat in subsequent years, viz., 1932, 1933, 1934, 1935, and 1936, was 52, 51, 14, 28, and 48, respectively. The control on a percentage basis for the same years in the order named was 98.2, 97.1, 97.6, 95.8, and 97.1.

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