

*Washington Agricultural Experiment Stations,  
Pullman, Washington - Jack P. Meiners*

Fungicide screening trials on snow mold control were conducted in Wash., in 1952 in cooperation with the National Cooperative Turf Fungicide Trials. These trials were initiated at this station in 1951, when 15 fungicides included in the screening test, were evaluated for snow mold control. The unusually heavy infestation of the disease, which occurred in 1951 subjected these fungicides to a severe test and those which gave little or no control were not included in the 1952 trials. One fungicide (Phenyl Mercury Acetate Solubilized No. 10) has been added.

As in the previous year, the trials were conducted on golf greens at 2 locations: one at the Indian Canyon Municipal Golf Course in Spokane, and the other at the Wash. State College Golf Course in Pullman. In both locations, the turf consists of Seaside bent and was fertilized for the final time in August 1952.

In Spokane, the chemicals were applied in mid-November to greens which were frozen. Five by 10 ft. plots in duplicate on each of 2 greens were used, but snow mold developed on only one green. Each of the 8 fungicides was applied at two dosages. In Pullman, 11 fungicides were applied in late November to frozen greens, using 8 by 80 ft. plots, with one plot of each fungicide on each of three greens. In both locations, application of the fungicide was made either in dry form using sand as a carrier (10 qts. - 1000 sq. ft.) or as a spray using water as a diluent (5 gals. - 1000 sq. ft.). In general, heavier dosages of materials were used in 1952, because the lighter dosages used in 1951 failed to give complete control.

In spite of very little snow cover, abundant snow mold developed on the untreated plots in both Pullman and Spokane in the winter of 1952-53 so that a good test of the fungicide was obtained. In Pullman, and on some of the greens in Spokane, the disease was associated primarily with *Fusarium nivale*; whereas, on the green on which the plots were located in Spokane, *Typhula itoana* was the dominant organism. Disease readings were taken early in March, 1953, and were recorded as per cent of the turf showing symptoms of snow mold. The results are summarized in the accompanying table.

The results obtained in 1952 agree very closely with those obtained in 1951. In both years and both locations, the liquid phenyl mercuries (PMAS, Puraturf, Phenyl Mercury Acetate Solubilized No. 10, Tact-C-Lect) were outstanding in reducing the percentage of snow mold. Cadminate, used at much heavier dosages this year, also gave excellent control at Spokane, although some injury to the turf was evident at the heavier dosage (4 oz.). This same material ranked just behind the phenyl mercuries at Pullman. Calo-Clor also reduced snow mold percentages considerably at both locations, but ranked well behind the phenyl mercuries in giving efficient and consistent control of the disease. As in 1951, Tersan was effective in Spokane, but ineffective in Pullman. The remaining fungicides tested did not provide adequate control of the disease.

In an additional trial conducted at Pullman, to determine the minimum effective dosage of PMAS required to control snow mold, it was found that 1 oz. in 5 gals. of water per 1000 sq. ft. did not provide as good control as did 2 ozs. but that 3 ozs. provided no additional control. Where one-half gal. of water per 1000 sq. ft. was substituted for 5 gals. of water as a diluent, no difference was noted in degree of control obtained.

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## HOW TO USE TCA TO ERADICATE QUACK GRASS AND JOHNSON GRASS

TCA (sodium trichloroacetate) is a new herbicide suggested for use to eradicate patches of quack grass and Johnson grass. Its use on extensive areas may be impractical because of the high cost of the material. It is not a selective weed killer and cannot be used in crops to kill grasses without injury to the crops. Although further trials are necessary to determine most effective methods and proper time of applications, the following recommendations are based on information now available.

### How to Apply

TCA is sold in powder form. To make spray solution, use 1 gallon of water for each pound of TCA. It may be necessary to stir until the material is in solution. The solution can be applied with an ordinary sprayer of sufficient capacity to apply the required amount per area. The low volume nozzles commonly used to apply 2,4-D solutions at 5 gallons per acre are not suitable for applying TCA at the rate required. They may be replaced with nozzles of higher capacity. Uniform distribution of the spray is essential for best results.

Caution: TCA is irritating to the skin and eyes. It must be handled with care to avoid burns.

### For Quack Grass

From 80 to 100 pounds per acre of 1/2 to 5/8 pounds of TCA per square rod is recommended for quack grass. It can be applied to the foliage, or the grass may be cut, removed and the spray applied to the stubble and on the soil. TCA can be applied anytime during the growing season that the soil is moist. Avoid applying during periods of drouth. Repeated applications may be necessary to complete the kill. Respraying should be delayed until it is apparent that the quack grass is not killed by the first application. If the first treatment was made during early summer, respraying should be done in late fall or delayed until the following year.

The recommendations for use of TCA on quack grass also apply to Bermuda grass.

### For Johnson Grass

Johnson grass is more difficult to kill than quack grass. The amount of TCA required ranges from 100 to 120 pounds per acre of 5/8 to 3/4 pounds per square rod. Since there is some evidence that Johnson grass absorbs TCA through the plant, it should be applied as a foliage spray. Spraying when top growth is 12 to 24 inches in height is suggested. In the event of tall rank growth the tops should be cut, removed and new growth allowed to develop before spraying. Fall (August and Sept.) applications have proved equally as effective as spring applications. Avoid applying during periods of drouth. Respraying may be necessary to destroy seedlings or plants that were not killed by the first spraying.

### Residual Effect

TCA applied at the rate recommended for controlling quack grass and Johnson grass may render the soil unproductive for a period. Under Indiana conditions this period usually does not exceed 90 days; however, under some conditions it has persisted in the soil for one year or more. Crops planted may be destroyed during the period when TCA is still in the soil.

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