Virginia Polytechnic Institute, Blacksburg, Agricultural Extension Service
MR 183

THE CONTROL OF QUACKGRASS

Quackgrass is a troublesome perennial that is extremely difficult to control once it becomes established. It has the appearance of a grassy wheat plant and makes a fair hay crop. Its troublesome qualities, however, outweigh its virtues.

METHOD OF SPREAD

Quackgrass can be distinguished from other grasses by the seed heads and the rootstocks. The seed heads resemble slender heads of wheat, but seeds are more oatlike than wheatlike. The rootstocks are miscalled "roots" and are actually underground stems. The underground stems run in all directions in the soil and send out roots and aerial leaves at each joint. In unplowed ground, the underground stems congregate near the surface of the soil. Broken pieces of rootstock take root readily and give rise to new plants. Seedlings of quackgrass produce rootstocks within eight weeks and a dense sod in one growing season.

CONTROLS

Tillage. Quackgrass, like all plants, can be controlled by continuous cultivation. Keeping the surface of the soil bare to deplete the rootstocks of food material is the secret of success. It requires great persistance to exhaust these rootstocks by constant cultivation. Fifteen or twenty cuttings with a spring-tooth harrow, or field cultivator equipped with "quackgrass teeth," are often not enough. Quackgrass in sodland where the roots are near the surface is not as difficult to control as it is in cultivated ground.

A common practice is to begin about the middle of June when quackgrass is coming into bloom and harrow the field once or twice weekly thereafter until winter. In the beginning, the harrow is set at a shallow depth and the depth increased with each cultivation until the harrow is running full depth. Harrow in a different direction each time for best results. The ground may be left rough over winter, or if subject to erosion, seeded to winter rye.

The next year the field is harrowed at intervals until time to plant a late crop of buckwheat, millet, or soybeans. Seed heavily and fertilize to promote shade for smothering out any stray quackgrass that survived harrowing.

The success of tillage as a control depends upon dry weather. Exposure of rootstocks to the hot sun for two or three days will kill them. If wet weather should occur and interrupt this program, it must be continued over a longer period of time.

Smothering. Small patches may be smothered out by covering with pieces of tar paper, tin, linoleum, heavy cartons, boards, and other materials that will effectively exclude all light. These should extend three feet or so beyond the area to be killed to prevent the grass from growing out from under it. Weight the cover down with stones to prevent it from blowing away. Two months or so under a cover destroys almost any plant. This method is very effective for small patches.

Chemical. TCA (trichloroacetic acid) is sold as the sodium, ammonium and calcium salts of this acid and may be used at the rate of 60 to 100 pounds of the acid equivalent per acre. Sodium TCA (90% STCA) is commonly used and available on the market. One ounce per square rod is equivalent to 10 pounds per acre. Other salts should be used as directed on the package. The chemical should be thoroughly dissolved in water and applied at the rate of a gallon per square rod, or about 150-160 gallons per acre. Enough water should be used to thoroughly wet the surface of the soil. Distribute the solution with a compressed air sprayer. If a sprinkling can is used, be sure that all of the surface is wet.

Treatments work best when applied between June and October. The lighter rates should be used on lighter soils. This chemical is not inflammable. The soil is rendered non-productive for two to four months at the above rates, depending on the amount used and the rainfall.

There is considerable evidence to show that discing the soil lightly previous to the application of the chemical can be used and the quantity of chemical reduced to 40 to 60 pounds per acre.

<u>Sodium Chlorate</u>, sold as pure sodium chlorate or as "Atlacide," may be applied at the rate of 1 to 1½ pounds of pure chemical per 100 square feet, or approximately 2½ to 4 pounds per square rod. The chemical may be applied as the dry crystals or as a spray. After this treatment, a light sandy soil is non-productive for six to twelve months and heavy clay soils are non-productive for ten to eighteen months. The length of this non-productivity depends upon soil type, rainfall, and fertilization.

The chemical presents a potential fire hazard <u>when mixed with</u> straw, wood, leather, clothing, or other organic materials. The danger still exists when the chemical is sprayed and allowed to dry on foliage. Chlorates are slightly corrosive to spray equipment. Large gallonages of water and immediate cleaning of equipment is suggested. <u>Keep farm animals off sprayed areas</u>.

<u>NOTE</u>

1. If one of these practices is selected, an attempt should be made to follow instructions. Repeated treatment, especially spot treatment, is often necessary for eradication.

2. The method of smothering should be considered since it is most economical method to use on small areas.

3. The use of either chemical is expensive, especially on large areas.

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