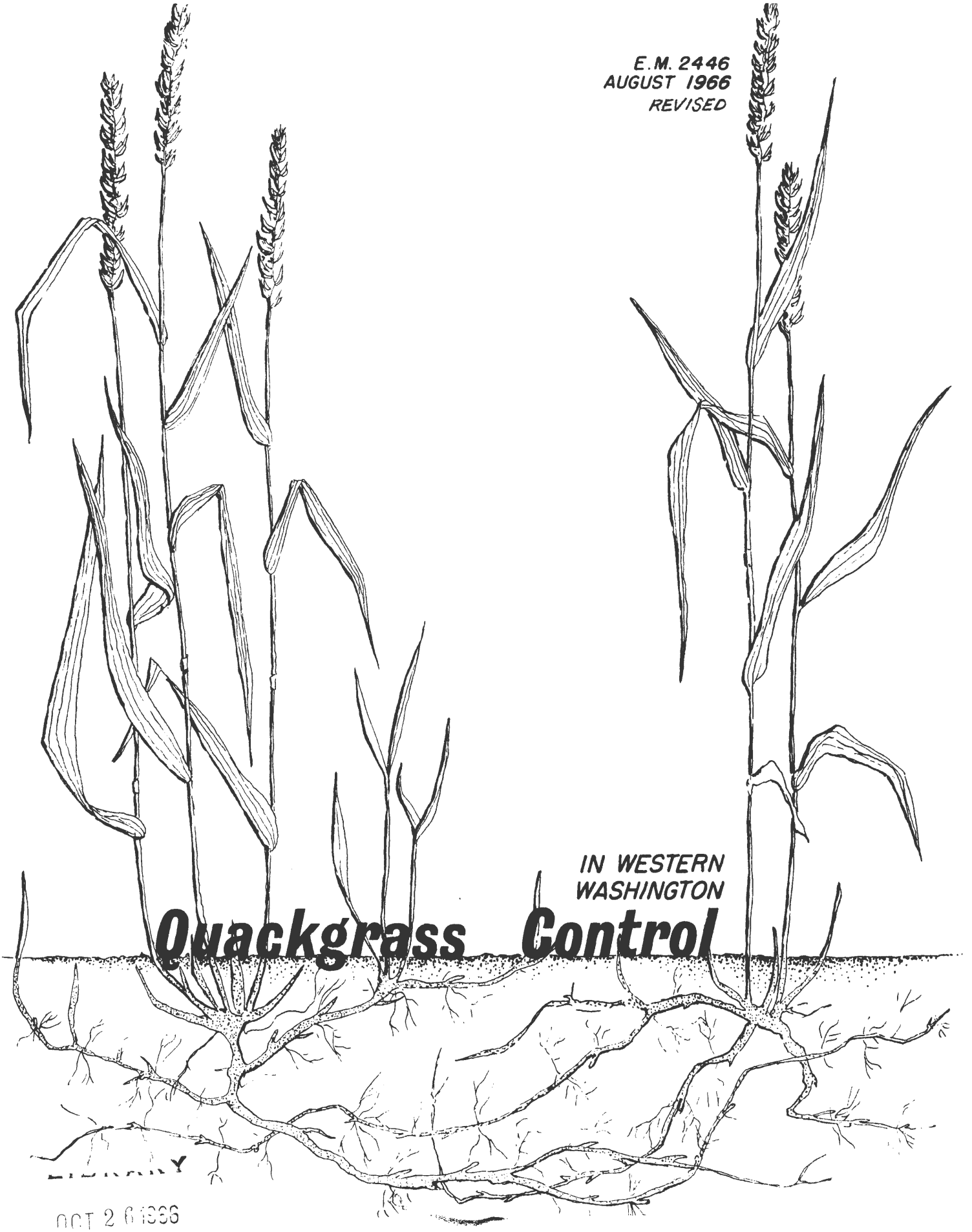
E.M. 2446
AUGUST 1966
REVISED



# Quackgrass Control IN WESTERN WASHINGTON



COOPERATIVE EXTENSION SERVICE • COLLEGE OF AGRICULTURE • WASHINGTON STATE UNIVERSITY • PULLMAN
In cooperation with the United States Department of Agriculture
Issued in furtherance of the Acts of May 8 and June 30, 1914, by the Washington State University
Cooperative Extension Service, John P. Miller, Director

August 1964 E.M. 2446

# QUACKGRASS CONTROL IN WESTERN WASHINGTON

Dwight Peabody and Ben Roché [1/]

Quackgrass (Agropyron repens), like most of our noxious weeds, is not a native. However it has been around for so long that it is now common to the farmlands of western Washington.

Quackgrass is more persistent than most perennial grasses for the following reasons:

1. It produces many viable seeds.

2. Its underground stems (rhizomes) when broken from the parent plant establish new plants.

3. It is very difficult with any single treatment to kill all of the many rhizomes present in the soil.

Quackgrass is well adapted to moist or even wet areas and its seasonal development depends upon a continual supply of moisture. Its upright growth, to 4 feet or more, combined with the density of the shoot-producing mass of rhizomes, enables it to crowd out most types of non-woody vegetation.

Quackgrass begins its seasonal development as the day time temperatures increase (late March). With adequate moisture and spring temperatures, it soon reaches six to eight inches in height. Where present as old stands, it will by this time be vigorously growing and moving leaf-manufactured foodstuffs into the root system for storage plus additional rhizome development. This is the best stage of growth for foliage-applied herbicides. If quackgrass is held in check by tillage operations during the cropping season and moisture remains plentiful, a similar growth stage will be produced in the early fall.

Control measures should be flexible enough to fit most management systems. Choices must be made based on crop tolerances to effective herbicides, seasonal uses of the infested field and, perhaps more important, the time available to the manager-operator to insure a proper job. It is for those reasons that we offer a variety of control techniques. At least one of the eight proposed should fit your program.

---

1/ Associate Agronomist, Northwestern Washington Experiment Station, Mount Vernon, and Extension Weed Specialist, Washington State University, Pullman, respectively.

## QUACKGRASS CONTROL METHODS

I. Karmex in non-cropland

Rate: 30 to 40 pounds per acre (Karmex is 80 per cent diuron).

Time: During periods of expected high rainfall (late October to early March).

Method: Apply uniformly to infested area.

Precautions: USE ONLY ON NON-CROPLAND (fence rows, rights-of-way, ditchbanks, etc.). DO NOT apply during the late spring and summer months because of lack of adequate rainfall. Wettable powder application precautions apply. (See footnote 1, pg. 2).

II. TCA

Rate: 70 to 90 pounds per care (TCA formulations vary from 90 to 94 per cent active).

Time: Early fall (late September to early November).

Method: Apply as a spray to tilled (disked) soil infested with quackgrass. Disk again (twice) after application to incorporate TCA with the soil.

Precautions: DO NOT plant crops in treated soil within five months of application. If high rainfall occurs soon after application to coarse (sandy) soils, quackgrass control will be poor. Fall applications result in markedly better control than spring treatments.

III. Eptam (before planting of potatoes and certain legume crops).

Rate: 2/3 of a gallon per acre (4 pounds of EPTC as marketed in the Eptam 6E formula).

Time: Immediately prior to planting potatoes of the following legumes in the spring: alfalfa, birdsfoot, trefoil, clover species and snap beans.

---

1/ WETTABLE POWDER PRECAUTIONS: Wettable powders go into suspension, not solution! Therefore, constant agitation will be required to insure a uniform mixture. Pumps, if not positive displacement, should be resistant to the abrasiveness of the powders. Line strainers and tip strainers should be 50 mesh or larger.

Method: Before EPTC application the infested area must be thoroughly tilled either by repeated cross disking or by a hooded power-driven rotary tiller having L-shaped teeth. Within minutes after application, EPTC must be mixed with the soil to a depth equal to the root zone of the quackgrass. The tillage methods previously described should be adequate.

Precautions: Quackgrass rhizomes must be chopped into small pieces by tillage implements before EPTC application. Only the above named crops can be planted in EPTC-treated soil immediately after application. Thorough incorporation of EPTC within 20 minutes of application is a prerequisite for control.

IV. Atrazine 80W (before planting sweet or field corn)

METHOD I: (Split application)

Rate: 2½ pounds per acre applied pre-plant plus 2½ pounds per acre post-emergence (atrazine 80W is 80 per cent atrazine).

Time: Apply pre-plant treatments 3 to 4 weeks before corn planting to growing quackgrass. Apply post-emergence treatment at spike stage of corn growth but before weeds are 1½ inches high.

METHOD II: (Single application)

Rate: 5 pounds per acre.

Time: 3 to 4 weeks before planting corn to the growing quackgrass.

Precautions: Control will be obtained only if atrazine is applied to quackgrass foliage in active stage of growth. Wettable powder precautions apply (Footnote 1, pg.2). At these rates (totaling 5 pounds per acre) atrazine will persist in certain soils for one year; therefore, corn should follow corn. Broadcast treatments (total surface area) provide better weed control than do band (over the row) applications. Only corn can be planted in soil treated as outlined above.

V. Atrazine 80W plus amitrole combination

Rate: 8 pounds of 50 per cent active amitrole plus 2½ pounds of atrazine 80W per acre.

Time: Apply amitrole 10 to 14 days before plowing and seedbed preparation to quackgrass foliage in vigorous growth. Apply atrazine post-emergence when corn is in the spike stage of growth but before weeds are 1½ inches high.

Method: Broadcast application of both sprays will result in best control. The addition of a spray adjuvant to the amitrole solution to improve spreading and sticking may increase control.

Precautions: Only corn can be planted in soil treated as outlined above. Amitrole powder must be dissolved in water prior to spraying. Results will be obtained only if amitrole is applied to growing quackgrass in a vigorous stage of growth. Amitrole will control some broadleaved perennial weed species growing with quackgrass. Since only a total of 2½ pounds of atrazine 80W per acre are used, any crop may be planted the following season under western Washington conditions. Wettable powder precautions apply to atrazine treatments. (Footnote 1, pg. 2)

VI. Amitrole plus tillage

Rate: 8 pounds of 50 per cent active amitrole formulation per acre.

Time: Early fall (early September to early November)

Method: Apply to vigorous quackgrass growth 6 to 8 inches in height. Tillage (spring tooth harrow) should commence 3 to 4 weeks after application and continue as time and weather permits until the following spring. The addition of a spray adjuvant to improve spreading and sticking may increase control.

Precautions: Control will be obtained only by combining the prescribed tillage program with the amitrole application. No crops can be planted (with the exception of corn) for 8 months after amitrole treatment. DO NOT cut or graze amitrole-treated plants for 8 months after treatment. DO NOT till before application. Quackgrass in vigorous growth at least 6 inches high is prerequisite to control. Day temperature should be at least 60° F. and no rainfall should occur for two days after application for best results. Application should be made at least one month before killing frost.

VII. Dowpon plus tillage

Rate: 15 pounds per acre (Dowpon is 85 per cent dalapon).

Time: Early fall (early September to early November)

Method: Apply to vigorous quackgrass growth 6 to 8 inches in height. Tillage (spring tooth harrow) should commence 3 to 4 weeks after application and continue as time and weather permit until the following spring. Dalapon does not control broadleaved weeds. Control will be obtained only by combining the prescribed tillage program with the dalapon application. DO NOT till before application. Day temperatures should be at least 60° F. and no rainfall should occur for two days after application for best results. Application should be made at least one month before killing frost. The addition of a spray adjuvant to improve spreading and sticking may increase control.

VIII. Tillage

Under favorable soil and climatic conditions good quackgrass control can be obtained with tillage implements alone. Quackgrass infestation in coarse soil types (sandy, gravelly, and light loam) can be virtually eliminated in one season under low rainfall conditions (less than 2 inches during the three summer months). The principal disadvantage is that no economic return can be realized during a clean cultivation program. Repeated diskings or rotary tillings as well as the use of a spring tooth harrow to drag quackgrass rhizomes to the surface of the soil will result in desiccation and death of these rhizomes under dry soil conditions. Such tillage every ten days to two weeks is probably necessary at the start of the program. As the season progresses, the frequency of tillage operations can be decreased to once every three or four weeks. The following conditions, either alone or in combination, will result in poor or no quackgrass control: (1) soils of high moisture-holding capacity, (2) frequent, light summer rainfall, (3) quackgrass rhizomes which remain undisturbed by tillage implements due to deep or strategic placement around the edges of fields, (4) tillage operations of insufficient frequency.

8/66
dlh