

30.71
r3el
no.734
957
3

DOCUMENT
SECTION
EGON
SECTION

QUACKGRASS

Rex Warren

OREGON STATE LIBRARY
AUG 13 1957



DISCARD

QUACKGRASS — *Agropyron repens*—Showing foliage, nature of root growth, seedhead, section of leaf illustrating auricle, and two views of seed. Seed magnified 2 diameters.

FEDERAL COOPERATIVE EXTENSION SERVICE OREGON STATE COLLEGE CORVALLIS

Cooperative Extension work in Agriculture and Home Economics, F. E. Price, director.
Oregon State College and the United States Department of Agriculture cooperating.
Printed and distributed in furtherance of Acts of Congress of May 8 and June 30, 1914.

Extension Bulletin 734

Revised July 1957

QUACKGRASS

Agropyron repens

Other names: Couchgrass, Wheatgrass, Witchgrass

Revised by REX WARREN, Extension Farm Crops Specialist
Oregon State College

QUACKGRASS is found in all sections of the State and adapts itself to almost all soil types. It is not an arid-climate weed, however, and is seldom found in Oregon in areas with less than 12 inches of rain, except on creek bottoms or subirrigated land. It is a grass that produces a fair quality of forage and hay, and is one of the best soil binders. Quackgrass is a serious weed where not wanted because it spreads rapidly and tends to take possession of any field once it becomes established.

The Oregon Seed Law classes quackgrass as a prohibited noxious weed. Vegetable and crop seeds containing quackgrass seed cannot be sold in the State.

Quackgrass is a long-lived perennial plant reproducing from both creeping rootstocks and seeds. The root systems develop from 2 to 8 inches deep. Most of the roots are found at the 4-inch level. At each joint of the rootstock there is a tough, brownish sheath having a scaly appearance. Branches are produced at nearly every joint. The ends of the rootstock are often very sharp. This sharp growing point will penetrate potatoes and similar objects. Stems are $1\frac{1}{2}$ to 3 feet tall. They are usually smooth and with 3 to 6 joints. Leaves have auricles (claw-like fingers) which clasp the stem and ligules (paper-like growth between leaf and stem) $\frac{1}{32}$ inch long. Leaves are often covered with whitish bloom.

Seedheads resemble those of ryegrass but the groups of seeds (grain), like wheat, are attached with their flat side against the stem. Heads vary from 3 to 10 inches in length. Quackgrass seeds (grain), because of similar size, are difficult to remove from ryegrass, orchardgrass, fescue, and most wheat-grasses.

Method of Spread

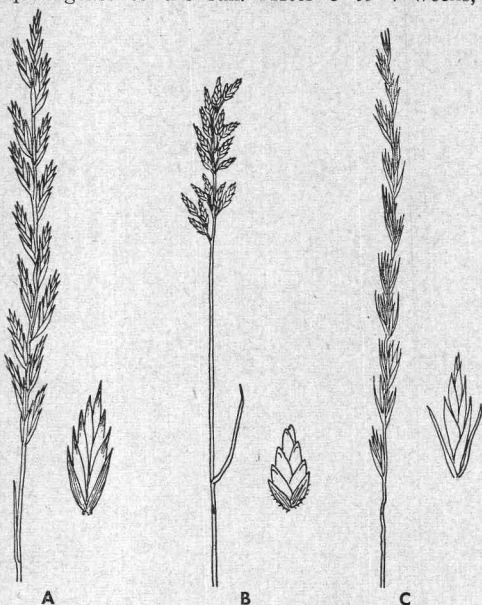
Quackgrass spreads by seeds and rootstocks. The most common method of spread is by planting quackgrass seed with impure grain or forage seeds. Once established in the field, it is readily spread by the dragging of rootstocks with farm machinery. Pasture fields containing quackgrass should be clipped early if the clipped forage is to be fed. When quackgrass forage is used for either hay or bedding, the quackgrass seeds are spread to clean fields with manure.

Control by Cultivation

Cultivation is the most practical and economical method of controlling large patches of quackgrass. When controlled by cultivation, the quackgrass-infested area should be dry plowed. This means plowing during the early summer. Before plowing, use growth for hay, pasture, or ensilage. Plow the field in such a manner that the furrow slice is left on edge. This is best accomplished by plowing with a general purpose moldboard plow.

Plowed fields should be left rough for 3 to 4 weeks, exposing roots of quackgrass to the sun. After 3 to 4 weeks, the quackgrass area should be

cross harrowed, using a springtooth type of harrow. Do not use a disk. The harrow pulls the plant roots to the surface, exposing them to further drying. If roots are numerous, they should be raked and burned. Reharrow the area as often as the quackgrass makes regrowth. Each reharrowing should be done at right angles to the previous harrowing. The cultivated field should be seeded in the early fall to adapted hay or forage crops. The crop planted should be seeded approximately 30 per cent heavier than used for normal planting. Twenty to thirty pounds of nitrogen per acre, applied at the time of planting, will increase the growth of the planted crop and provide more competition for the quackgrass. The planted crop should be removed for either hay or ensilage the following spring. Immediately after the crop



Seedheads of grasses commonly confused with Quackgrass.

- A. Western Wheatgrass—*Agropyron smithii*
- B. Canada Bluegrass—*Poa compressa*
- C. Beardless Wild-Rye—*Elymus triticoides*

is removed, plow and harrow the land, similar to the previous year's treatment. Two years of dry plowing with timely harrowing will eradicate quackgrass.

Dry plowing following the harvesting of fall-sown crops, helps control light infestations of quackgrass. With this control method, the field should be plowed immediately after harvest, the surface should be left rough thus exposing the quackgrass roots. The field should be cross harrowed in approximately 3 weeks. Straw from the harvested crop must be removed before plowing; otherwise it is difficult to pull the quackgrass roots to the surface by harrowing.

Chemical Control

Chemical applications to control quackgrass should be limited to spot or small-area treatments. Most chemicals tested, other than soil sterilants, have not given permanent quackgrass kills. Chemical applications usually need to be made for 2 to 3 successive years to obtain satisfactory results.

Dalapon

Quackgrass can be controlled with Dalapon. Quackgrass should be sprayed while there is enough soil moisture to provide active plant growth. Twenty pounds of Dalapon per acre will control quackgrass for 60 to 80 days. Respraying of new growth is necessary. The number of resprays needed for eradication is not known. Each spraying kills more of the quackgrass plants.

Experiment station tests in Oregon have not shown dependable advantages from plowing quackgrass areas following spraying. Tests in some states do show better kills when the spray areas are plowed 5 to 10 days after spraying. The sprayed area should not be seeded for 6 to 8 weeks after spraying. Rate of disappearance of Dalapon from the soil is dependent on soil temperature and soil moisture. The chemical disappears in a few weeks when soil moisture is high and soil temperature is 70° to 80° F.

Amino triazole

ATA (Amino triazole), like Dalapon, does not completely control quackgrass with one application. ATA should be used at 10 pounds of product per acre. Better control is obtained when the ATA-sprayed areas are plowed or disked 5 to 10 days after spraying. Crops such as corn, oats, beans, and sudangrass can be planted 10 days after spraying with recommended rates of ATA.

Karmex W and Karmex DW

Karmex W and DW (Monuron and diuron) used at nonselective rates control quackgrass. Karmex W (Monuron) is recommended for drier areas (less than 20 inches of moisture annually). Karmex DW (diuron) is best in areas of over 20 inches moisture annually. Thirty pounds of Karmex is recommended for control in both low- and high-rainfall regions. Karmex sprays are insoluble and will affect the soil for several years. Both chemicals, when irrigation is not available, should be fall applied.

Other sterilant chemicals

Sodium chlorate and borate-chlorate mixtures will control quackgrass. Fall applications are recommended in areas receiving less than 20 inches of moisture annually. Spring applications are best in areas with over 20 inches of moisture annually. Sodium chlorate should be used at 4 to 5 pounds per square rod. Borate-chlorate mixtures should be used at 10 to 14 pounds per square rod. Better control can be obtained by dividing the chemical and making two applications. The second treatment is made about 30 days after the first.

Sodium chlorate-sprayed materials after drying are a fire hazard. Spray solutions should be washed immediately from clothing and footwear. Do not use chlorate sprays near buildings. Chlorates are safer when applied dry rather than when used as sprays.