KANSAS DEPARTMENT OF AGRICULTURE

OFFICIAL CONTROL METHODS FOR QUACKGRASS

Elymus repens (L.) Gould

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DESCRIPTION

Quackgrass is a cool-season perennial grass introduced from Eurasia. It reproduces by seed and rhizomes. Rhizomes are pale yellow or straw colored, cord-like about 1/8 inch in diameter and vary from 2-18 inches in depth, with new roots and plants emerging from nodes. Stems grow up to 3 feet tall with 3-6 joints. Leaves are 3-12 inches long, shiny, dark green, and bear two conspicuous, tooth-like projections where the blade joins the stem. The dry, lower sheaths, leaves, and stems are distinctly hairy; upper sheaths are hairless or nearly so. Tiny wind-pollinated flowers are borne in groups of 4-7 subtended by 2 unawned or short-awned glumes (each group is called a spikelet). Spikelets are flattened and mostly solitary at each node along a 2-4-inch long terminal spike. The grains are slender and about ¼ inch long. Flowering June-August; fruiting July-October.

PREVENTION OF SPREAD

The Noxious Weed Law (K.S.A. 2-1313a et. seq.) requires all landowners to control the spread of and to eradicate quackgrass on all lands owned or supervised by them. Methods used for control must prevent both the production of viable seed and destroy the plant's ability to reproduce by vegetative means. Infestation sites must be monitored after control methods have been accomplished to ensure that dormant seeds in the seedbank do not germinate and establish new infestations.

QUACKGRASS CONTROL PRACTICES

Quackgrass control means that both the roots and the flowers must be destroyed. Because quackgrass is a perennial, with the exception of herbicide applications, one or more of the following methods must be used together to control quackgrass.

Cultural Control

Cultural weed control involves land and vegetation management techniques used to prevent the establishment or control the spread of noxious weeds.

Cattle and horses readily feed on quackgrass, but populations are only suppressed and rarely eradicated even with intensive grazing. Intensively grazing to 2 inches or less will reduce the dominance of quackgrass in an area. Horses and cattle enjoy eating rhizomes, and pigs will root through the soil to find them.

Frequent surveys of fence lines, roadway, ditches and other susceptible areas for new infestations and the quick removal of any new plants will prevent quackgrass from becoming established.

Mechanical Control

Mechanical weed control involves the physical removal of all parts or just the reproductive parts of weeds.

As a perennial species, quackgrass is difficult to control mechanically.

Repeated four-inch-deep tillage beginning in the hottest, driest part of the summer should suppress infestations. The disruption will separate rhizome buds from their parent plants and cause them to sprout, so tillage must be repeated whenever the new plants put out three leaves, throughout the season, to prevent the development of any new rhizomes. This tillage must be repeated annually for good control. It is important to clean roots and root fragments from equipment before entering uninfested areas of the field or other fields to prevent the spread of quackgrass. It is also not

practical to clean cultivate over a two-year period because of the resulting wind and water erosion or loss of income due to no crop returns.
Following a sequence of repeated tillage throughout the summer, a fall cover crop should be planted at a seeding rate of 2 to 2.5 bushels per acre.

Chemical Control

The following herbicides may be used for cost-share with landowners. Other products labeled and registered for use on this noxious weed in Kansas may be used in accordance with label directions but are not available for cost-share. Be sure to follow all label directions and precautions. For additional information consult the most recent edition of the KSU publication of "Chemical Weed Control for Field Crops, Pastures, Rangeland, and Noncropland".
Any two or more of the herbicides listed below may be available for cost-share as a pre-mix or a tank mix if allowed on the respective labels. Contact your county weed program for availability.

Herbicide	Mode of Action
diquat	22
fluazifop-p-butyl	1
glyphosate	9
nicosulfuron	2
sethoxydim	1
sulfosulfuron	2

Biological Control

Biological control refers to the deliberate application of a living organism to control the spread of weeds. These agents will not eradicate their host plant, therefore other control methods must be used in addition to the use of biological control agents as part of an integrated pest management strategy. The importation of biological control agents is regulated by USDA-APHIS and is allowed by permit only.

There are no biological control agents available for quackgrass.