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Circular 827

Controlling **JOHNSONGRASS**

in Illinois

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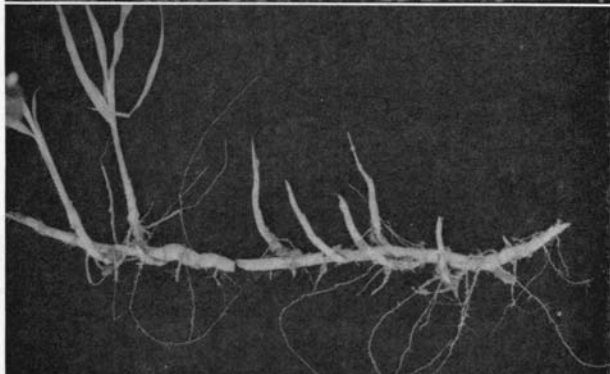
JOHNSONGRASS, an erect, perennial plant 3 to 10 feet tall, looks a lot like sudan grass. It differs, however, in having scaly rhizomes (underground stems), which may be several feet long and $\frac{1}{4}$ to $\frac{3}{4}$ inch in diameter.

Although it has been grown for forage, its disadvantages far outweigh any advantages. Once established, it chokes out other crops, making fields almost worthless for crop production.

It is widespread through most of the south. Having spread rapidly northward through southern Illinois, it is now a serious pest in our state. Since 1959 it has been listed as a primary noxious weed under the Illinois Noxious Weed Law.

Johnsongrass is a community problem. If it gets a start in an area, everybody has to work together to lick it. This includes not only farmers and other rural residents, but also those responsible for railroad and highway right-of-ways, utilities, and levee districts.

This early spring growth of Johnsongrass is arising from the rhizomes shown in the bottom picture.



Keep on the lookout for scattered clumps of Johnsongrass and destroy them before seed is produced. Atlacide, applied either dry or as a spray, may be used for this purpose.



PREVENTING INFESTATIONS

Johnsongrass spreads rapidly in two ways — by seeds and by rhizomes.

Seeds from only a few plants can be carried by birds, livestock, wind, water, and machinery to infest clean areas. Seedlings are especially troublesome in flooded bottomlands, since each overflow may bring in a new seed population.

The seeds may remain dormant in the soil and germinate over a long period of time. Thus, many areas are continually plagued with new seedlings, even where established plants are effectively controlled.

New plants also start from buds at the joints of rhizomes. When pieces of rhizomes are moved and dropped in clean soil, they may start new infestations. It is the rhizomes that make Johnsongrass a perennial, and also make it very difficult to eradicate.

These measures are necessary to prevent the spread of seeds and rhizomes:

1. Sow only clean seed that is free of Johnsongrass.
2. Do not bring straw or hay from infested fields to clean areas.
3. Clean combines, corn pickers, and other farm machinery in which seeds might lodge, before moving them from infested to clean fields.
4. Avoid dragging pieces of rhizomes from infested to clean areas with farm implements.
5. Don't let Johnsongrass develop mature seed.



ELIMINATING SMALL PATCHES

Johnsongrass first appears as a few scattered clumps along roadsides, railroads, or fences, on waste land, or in fields. If not controlled, a clump will become a solid stand in a few years. The easiest way to keep Johnsongrass from spreading is to eliminate clumps or small patches promptly. Two materials are recommended for this purpose.

Atlacide. For clumps, use a cupful around the base of each clump. For patches, use Atlacide at the rate of 6 pounds per square rod. Be sure to treat far enough out from the plants so the chemical will kill rhizomes creeping under the soil surface. Atlacide may be used in dry form or mixed with water and used as a spray. (Experienced operators may use sodium chlorate at the rate of 4 pounds per square rod. Sodium chlorate is a fire hazard on flammable material such as clothing, hay, wood, or dry weeds. Atlacide contains sodium chlorate but is less hazardous because it also contains calcium chloride, which is a fire retardant. Both sodium chlorate and Atlacide will sterilize the soil for about a year or more.)

Dalapon. Use at the rate of 1 pound in 5 gallons of water. Treat when the grass is between 1 and 2 feet high. Apply a second treatment about 3 weeks later to kill any new growth. Dalapon acts through the leaves; so thoroughly wet the foliage with the spray.

A knapsack or small compression type sprayer is satisfactory for small patches.

CONTROLLING SOLID STANDS

In fields sown to winter grain. One of the most effective ways of controlling Johnsongrass is to work the soil after harvest of winter grain. The grain is usually harvested before Johnsongrass makes its heaviest growth and before the Johnsongrass seed matures. Follow these steps when no chemicals are to be used:

1. Harvest grain.
2. Plow the stubble under.
3. Disk every 2 or 3 weeks for the rest of the season.
4. Grow winter grains for several years or alternate with corn.

This program can eliminate the top growth of Johnsongrass, but it takes a relatively long time to eliminate all the rhizomes. Chemical treatment after harvest gives better control of rhizomes and adds little or nothing to the cost because less tillage is needed. Follow these steps for chemical control of Johnsongrass after winter grain:

1. Allow the Johnsongrass to grow for 10 to 14 days after harvest.

Working the soil after winter grain harvest brings many rhizomes to the surface, where they are dried and killed by sunlight and wind. Rhizomes remaining under the surface can be killed by working the soil every 2 or 3 weeks. This stops plant growth and manufacture of food.



2. Chop or clip the infested stubble.
3. Let the Johnsongrass regrow to a height of 12 to 14 inches.
4. Spray with dalapon. Use 8 pounds of dalapon in 30 to 40 gallons of water per acre.
5. Fall plow.
6. Plant corn or soybeans the next season. Use Eptam as a pre-emergence spray in corn to prevent the establishment of new grass from seed. (See step number 6 below.)

With corn or soybeans. When dalapon was not used the previous summer or fall, follow these steps:

1. Omit spring tillage and let Johnsongrass grow about a foot high.
2. Spray with dalapon. Use 10 pounds in 30 to 40 gallons of water per acre.
3. Wait 7 to 10 days and plow.
4. Wait 2½ to 3 weeks before planting corn. This allows the dalapon to decompose. If you plant soybeans wait the full 3 weeks to avoid crop injury.
5. Plant corn or soybeans.
6. When you plant corn apply Eptam to control the Johnsongrass which grows from seed. Use ¾ quart of Eptam (1 pound actual) in 7 to 10 gallons of water per acre to treat a 14-inch band over the corn row. Work Eptam into the soil with a harrow, rotary hoe, or disk set to run almost straight. Do

Johnsongrass makes most of its lush summer growth during July and August and competes seriously with corn and soybeans at this time.





The untreated row of corn on the left is competing with Johnsongrass which grew from seed. The weed-free row on the right was treated with Eptam at planting time. Since Johnsongrass plants growing from seed can produce rhizomes about 3 to 6 weeks after they emerge and a new crop of seed in about 70 days, seedling control is essential in a good control program.

not use Eptam on soybeans. (Eptam sometimes injures corn but this is usually insignificant compared to the damage caused by Johnsongrass.)

7. Do a good job of cultivating.

8. Watch for small clumps of Johnsongrass and destroy them.

Although this treatment delays planting a month, the delay becomes critical only in the northern part of the Johnsongrass area. In this northern area it is best to grow shorter season varieties of corn or soybeans and to start the preplanting treatments when the grass is 8 inches tall in the spring.

Preplanting treatments with dalapon have not completely eliminated established stands, but they have reduced infestation enough that crop yields are nearly normal.

Pastures and hay fields. If Johnsongrass is closely grazed for two or more seasons, the plants become weak or stunted. Frequent mowing will also weaken and partially control Johnsongrass. Although pasturing and mowing will not eliminate the weeds, the weakened plants will be more susceptible to other treatments.

Fencerows, roadsides, levees, railroad right-of-ways, and other non-crop land. Johnsongrass in fencerows and similar areas furnishes a constant supply of seed to infest fields. These areas need to be treated to eliminate the seed supply and kill established stands.

For clumps or small patches, follow the suggestions already given. The following procedure is recommended for more serious infestations: To control seed production, apply dalapon at the rate of 8 pounds in at least 30 to 40 gallons of water per acre when the grass is 2 to 3 feet tall. A second application at the same rate about 2 weeks later helps to kill roots and rhizomes. A third treatment may be needed late in the season to control new seedlings or new growth from old rhizomes. Other soil sterilants can be used for such non-crop land but they are usually more expensive than dalapon.

Fallowing. Where land has been fallowed one year and corn raised the next, farmers have sometimes harvested more from the one crop than from two crops infested with Johnsongrass. Most farmers, however, do not want to leave land fallow for an entire year. By raising winter grain and controlling Johnsongrass with chemicals, farmers can produce a profitable crop each year.

Even after using a good control program for a few years, don't relax. Keep on the lookout for new plants which may arise from old seed left in the soil or from newly introduced seed.

(This circular was prepared by Fred Slife, Associate Professor of Crop Production, and Ellery Knake, Assistant Professor of Crops Extension.)