

TURFGRASS MANAGEMENT

- For Professionals
- For Homeowners

This publication is meant for homeowners. For sedge control for turf professionals, see Turfgrass Management: Sedge Control for Turf Professionals (Purdue Extension publication AY-338-W), available from the Education Store, www.the-education-store.com.

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Yellow Nutsedge Control

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Yellow nutsedge (*Cyperus esculentus*) is a troublesome, difficult-to-control weed that is often found in turf areas (Figure 1). It is also called chufa, nutgrass, or watergrass.

It is important to remember that yellow nutsedge is not a grass or broadleaf weed, but a sedge. Understanding this plant's biology makes it easier to know how to best control it. This publication describes the life cycle and identification of yellow nutsedge and recommends cultural and chemical management options for homeowners.



Figure 1. Yellow nutsedge is a problematic turf weed that is difficult to control.

Life Cycle and Identification

Yellow nutsedge is a perennial plant that reproduces primarily by small underground tubers — called nutlets — that form at the end of underground stems — called rhizomes (Figure 2). A single plant can produce several hundred of these tubers during the summer. Yellow nutsedge can also spread by rhizomes (Figure 3). Yellow nutsedge produces a seedhead when unmown, but its seeds rarely germinate.

Yellow nutsedge actively grows during the heat of summer when cool-season turf grows more slowly. Yellow nutsedge typically emerges (germinates from tubers) in Indiana in late April or May (a few weeks after crabgrass germinates) and grows actively until the first frost in autumn. A frost will kill the plant's aboveground portion but the tubers will survive and overwinter in the soil. Dormant tubers can germinate and emerge throughout the following season or survive in the soil for more than three years.

Yellow nutsedge is most noticeable in summer because its leaves grow more rapidly than the turf during the hottest summer months (Figure 4). During spring and fall (when it is cooler) nutsedge growth is slower and not as easy to spot in turf.

Yellow nutsedge can be identified by the triangular shape of its stem. You can feel the shape by rolling the stem in your fingertips.

Yellow nutsedge leaves are arranged in groups of three (three-ranked), which also distinguishes it from grasses (Figure 5). The leaves are light green to yellowish, and each leaf has a long, tapered tip. Each leaf also has a prominent midrib, and has a slick, shiny, or waxy appearance.

While many grasses (such as crabgrass) have hairs on the leaf blades, yellow nutsedge does not. Yellow nutsedge will produce a golden seedhead, although the seedhead seldom forms in frequently mown turf.

Site History and Cultural Control Methods

Yellow nutsedge is a problem in many agricultural fields, and (as can be expected by its reproductive methods) in lawns that have been converted from farmland. It also is a troublesome weed in horticultural and nursery crop production. Yellow nutsedge tubers can easily be spread by soil (topsoil or fill dirt) from one area to another during construction. Additionally, people and equipment can spread yellow nutsedge any time they move soil while planting or dividing ornamental plants in the landscape.

The best method for controlling yellow nutsedge (and other weeds) is to grow a healthy, dense, vigorous stand of turf that can compete with weeds. Encourage dense turf stands by following proper turf maintenance practices, including fall fertilization, proper irrigation, frequent mowing at the proper height, and over-seeding as needed.

Yellow nutsedge is most problematic in turf that is mown too short, and it thrives in areas where soils remain moist from poor drainage or over-watering. However, yellow nutsedge can also be a problem in well-drained areas, especially thin turf.



Figure 2. This image shows a mature yellow nutsedge tuber (the brown structure on top) and a yellow nutsedge tuber forming on the tip of a rhizome.



Figure 3. This yellow nutsedge plant is spreading both by a rhizome (left) and a tuber (the swollen rhizome tip at the bottom of the photo).



Figure 4. Yellow nutsedge grows taller than the surrounding turf during the summer.



Figure 5. The three-ranked leaf arrangement of yellow nutsedge.

If only a few yellow nutsedge plants are present, hand pulling will help eliminate the weeds but will not remove the tubers in the soil. Several weeks after pulling yellow nutsedge, check the area to see if the plants have regrown from the tubers. For yellow nutsedge in landscape beds, it is best to remove the entire plant (including the root/rhizome system) by digging around the plant's base. This will help ensure that you will not get regrowth from the nutsedge's underground rhizomes.

Control with Herbicides

Herbicides may be required when large patches of nutsedge are present in the turf. The traditional herbicides used to control dandelions (*Taraxacum officinale*) and crabgrass (*Digitaria* spp.) are ineffective since yellow nutsedge is a sedge and not a broadleaf or grass. Herbicides that contain halosulfuron (Figure 6) or sulfentrazone (Figure 7) are recommended for yellow nutsedge control.

Regardless of herbicide selection, yellow nutsedge is a difficult-to-control weed that may require multiple herbicide applications. Follow label directions about when to make follow-up applications, if needed.

Late spring/early summer (when it is young and actively growing) is the ideal time to control yellow nutsedge. During its early growth stages, yellow nutsedge has not started producing tubers and is most susceptible to control with



Figure 6. An example of a sedge herbicide that contains 75 percent of the active ingredient halosulfuron and sold in prepackaged 0.9-gram packets that treat 1,000 square feet of turf.



Figure 7. An example of a sedge herbicide that contains sulfentrazone.

herbicides. As the summer progresses, nutsedge plants form seedheads and tubers. Since the tubers are the plants' primary survival structure, it is critical to control nutsedge early in the summer before it produces tubers.

Be patient. Two to three years of control using herbicides will be needed to reduce viable tubers in the soil by 90 percent. Herbicide applications will injure growing yellow nutsedge plants and help prevent more tubers from forming, but herbicide applications will not

Table 1. Sedge control ratings for homeowner products¹.

Herbicides	Homeowner Product	Ready-To-Use ²	Yellow Nutsedge Control ¹
2, 4-D + mecoprop + dicamba + sulfentrazone	Gordon's Trimec Nutsedge Plus Lawn Weed Killer Concentrate [®] , Spectracide Weed Stop 2x for Lawns Concentrate [®]	No	F
	Spectracide Weed Stop 2x for Lawns [®] RTU	Yes	
2,4-D + quinclorac + dicamba + sulfentrazone	Spectracide Weed Stop for Lawns Plus Crabgrass Killer Concentrate [®]	No	F
	Spectracide Weed Stop for Lawns Plus Crabgrass Killer [®]	Yes	
halosulfuron	HI-YIELD Nutsedge Control [®] , Nufarm Halosulfuron Pro [®] , Nutgrass Killer Selective Herbicide [®] , Nutgrass Killer II Selective Herbicide [®] , SedgeHammer [®] , SedgeHammer+ [®]	No	G-E
sulfentrazone	Ortho Nutsedge Killer for Lawns [®]	Yes	E
sulfentrazone + prodiamine	Bonide Prozone Weed Beater Complete ^{®2} , Bonide Sedge Ender ^{®2}	No	E
sulfentrazone + quinclorac	Image Herbicide Kills Crabgrass II [®]	No	E

¹E=excellent (≥90% control). G=good (75-90% control). F=fair (50-75% control). P=poor (≤50% control). These are relative control rankings based on research of the efficacy of professional products. Weed control will vary with environmental conditions, application timing, turfgrass vigor, and other factors. This table is only a guide. Repeat applications are needed for complete control of sedges with all herbicides.

²Ready-to-use (RTU) products come in spray bottles and require no mixing or additional equipment to apply. Ready-to-spray (RTS) containers are also available in some products that can be applied as a spray using the RTS container with the herbicide and water from a garden hose. Products that come dry or in concentrated liquid form, require pump-up sprayers and mixing to apply.

control tubers that are viable in the soil but have not yet produced plants.

Before using any herbicide, always refer to the product label for specific instructions about proper use and turfgrass tolerance.

The exact product that you use will be based on its availability at retailers. See Table 1 for a list of products that contain these active ingredients that can be purchased online or at local hard-

ware stores, garden centers, home improvement warehouses, and superstores. Some of these products will be ready-to-use (RTU) in a spray bottle, while others will require mixing in a sprayer. Table 1 indicates whether products are RTU.

Before using any herbicide, consider the following steps for successful yellow nutsedge control:

1. Read and follow all directions on the herbicide label.
2. Do not mow one or two days prior to or following the herbicide application.
3. Treat the area with the proper rate of herbicide and volume of water listed on the product label. Do not apply the herbicide if the turf is stressed due to drought or high temperatures (≥90°F).
4. Six to ten weeks after the first application, repeat steps 2 and 3 if the yellow nutsedge has recovered or regrown from tubers.

Find Out More

Purdue Extension offers many publications about establishing, maintaining, and controlling lawn pests. Get these publications from:

The Purdue Extension Education Store
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When using products that contain 75 percent halosulfuron (that is, a 75DF formulation), add a nonionic surfactant to improve control. Nonionic surfactant is a soap-like liquid that helps herbicide sprays better cover the leaf tissue to kill the weed. Ask the experts at your local garden center about these surfactants and their availability. Many garden centers carry the nonionic surfactant Hi-Yield® Spreader Sticker that can be used.

If your retailer does not sell a nonionic surfactant, certain liquid dish detergents such as Ivory® liquid dish soap contain high amounts of a nonionic surfactant and they can be used as a substitute. The detergent label may say whether it contains a nonionic surfactant (do not use products that contain anionic surfactant).

For spot treatments of nutsedge with halosulfuron, products will typically be sold in 0.9-gram packets (Figure 6). To use, mix one 0.9-gram packet of halosulfuron and 2 teaspoons of nonionic surfactant in 1 gallon of water. This amount will treat 1,000 square feet.

A new halosulfuron formulation may also be available at some retailers that already includes the surfactant. This product is sold under the trade name SedgeHammer+® (pronounced SedgeHammer plus), so adding a surfactant to this formulation is unnecessary. For spot treatments with SedgeHammer+®, use one 0.5-ounce packet per 1,000 square feet. Unlike halosulfuron, products that contain sulfentrazone do not require a surfactant to control nutsedge.

Of the two ingredients (sulfentrazone and halosulfuron), sulfentrazone will provide the quickest control. Injury symptoms appear on yellow nutsedge within a few days after a sulfentrazone application. Injury symptoms appear on yellow nutsedge about two weeks after a halosulfuron application.

Glyphosate products (Roundup® and others) can also be used to treat yellow nutsedge in landscape beds and gardens, but glyphosate provides only marginal control. Make sure not to use glyphosate to treat yellow nutsedge in your lawn because this product is nonselective and will kill the turf in your lawn as well as the weeds.

Professional turf managers have additional herbicide options for yellow nutsedge control. These herbicides are not readily available to homeowners and should only be applied by professionals. Homeowners can hire professional turf specialists to apply these herbicides.

Summary

In summary, sedges are problem weeds and are difficult to control with nonchemical options. Many herbicides are available for sedge control but proper herbicide use and application timing is critical to optimize control.

For best results, apply herbicides prior to tuber production. The most common mistake is to apply herbicides too late in the season after yellow nutsedge is big, spreading by rhizomes, and producing tubers. To be effective, you will need to implement a sedge control program early in the season and continue it for more than a year to reduce tuber populations in the soil and prevent the spread of this problematic weed.

References

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- Webster, T.W. 2005. Mulch type affects growth and tuber production of yellow nutsedge (*Cyperus esculentus*) and purple nutsedge (*Cyperus rotundus*). *Weed Sci.* 53:834-838.

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