Proven Yellow Nutsedge Control Strategies

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Conditions favor outbreaks of this troublesome, difficult-to-control weed

Yellow nutsedge emerges (germinates from tubers) in the spring a few weeks after crabgrass germinates and grows actively until the first frost in northern states. Several areas of the country have had difficulty growing good turf the past few years due to drought and warmer-than-average summer temperatures. As a result, many weeds have won the war against turf recently. Yellow nutsedge (Cyperus esculentus) is among the many weeds that have seemed more problematic the past few years, and it looks as though it will be problematic again this year, especially in light of the warm start to 2012. Yellow nutsedge is a troublesome, difficult-to-control weed often referred to as nutgrass or watergrass. It is not a grassy weed or broadleaf, but a sedge. It is important to first understand its biology in order to best understand how to control it.

Life cycle and ID

Yellow nutsedge is a perennial plant that reproduces primarily by small underground tubers called nutlets which are formed on the end of its rhizomes. Up to several hundred of these tubers can be produced from a single plant during the summer. It can also spread by these rhizomes (belowground stems). Yellow nutsedge grows most actively during the hot months of summer. It emerges (germinates from tubers) in the spring a few weeks
after crabgrass germinates and grows actively until the first frost in northern states. Frost will kill the aboveground portion of the plant, but the tubers survive and overwinter in the soil. These dormant tubers can germinate throughout the following spring and summer and can survive in the soil for more than three years.

Yellow nutsedge can be found in lawns built on farm ground – yellow nutsedge is a problematic weed in many agricultural fields – or can easily be spread by soil (topsoil or fill dirt) during construction. Additionally, it can be spread anytime soil is moved when planting ornamental plants as it is also a weed in horticultural crops and nurseries. Thus, be careful to plant nursery stock without this weed.

Yellow nutsedge is most noticeable in the summer. Often the leaves will grow more rapidly than the turf during the hottest months of the summer. During spring and fall when temperatures are cooler, yellow nutsedge growth is slower and it is not as easily spotted in turf.

Yellow nutsedge can be problematic in well-drained areas, especially if the turf is thin. PHOTOS COURTESY OF AARON PATTON, PH.D.
The triangular shape of the stem is one way to identify yellow nutsedge. If you roll the stem of the plant in your fingers, you should be able to feel the triangular shape. Yellow nutsedge leaves are arranged in groups of three, which also distinguishes it from grassy weeds. The leaves are light green to yellowish in color with a long, tapered leaf tip and a prominent midrib, and are very slick or waxy to the touch as well as shiny in appearance.

Yellow nutsedge does not have hairs on its leaves that distinguish it from many problematic summer annual grassy weeds. It will produce a golden colored seedhead although the seedhead seldom forms in turf that is mown frequently.
Cultural controls

A healthy, dense, vigorous stand of turf that can compete with yellow nutsedge and other weeds is the best control method. Encourage a dense stand of turf by following proper turf maintenance practices, including fall fertilization. Yellow nutsedge is most problematic in turf mown too short and in wet soils in either poorly drained areas or when turf is over-watered. Additionally, it can be problematic in well-drained areas, especially if the turf is thin.

Control with herbicides

Regardless of herbicide selection, yellow nutsedge is a difficult-to-control weed and requires multiple herbicide applications for control. Follow label directions on when to make a second application. Late spring/early summer is the ideal time to control yellow nutsedge. At this time, the weed is young, actively growing, and most susceptible to herbicidal control, and has not yet started to produce tubers. As the summer progresses, it becomes more mature and begins to form seedheads and tubers. Yellow nutsedge primarily spreads by tubers as seeds produced rarely germinate. Since these tubers are the primary survival structure for yellow nutsedge, controlling it early in the summer before it produces tubers is key for control in the current year and in subsequent years. Two to three years of control with herbicides will be needed to reduce viable tubers in the soil by 90 percent as herbicide applications will injure growing plants but not dormant tubers.

Yellow nutsedge can spread by these rhizomes, which are belowground stems. Consider the following steps in order to be successful in reducing yellow nutsedge contamination regardless of the herbicide you choose.
1. Be sure to read and follow all directions on the herbicide label.

2. Do not mow one to two days prior to or following the herbicide application.

3. Treat the area with the proper rate of herbicide and volume of water based on the recommendations found on the label. Do not apply the herbicide if the turf is stressed due to drought or high temperatures.

4. Four to eight weeks after the first application, repeat steps two and three if the yellow nutsedge has recovered or regrown from tubers.

**Herbicide options**

Professional turf managers have many herbicide options. In most cases, these products will selectively eliminate yellow nutsedge from a turf area without damaging the desirable turf species although herbicides are labeled for use on specific turf species.

- **Cool-season turfgrass**: In cool-season turf, products that contain sulfentrazone (Dismiss) can also provide preemergence and postemergence control of annual sedge and yellow nutsedge, although only Echelon (prodiamine + sulfentrazone) is labeled for preemergence control. Dismiss is the primary postemergence herbicide with sulfentrazone, although Solitare (sulfentrazone + quinclorac) has similar amounts of sulfentrazone, too. Q4 Plus, Surge, SureZone and TZONE are among the many herbicides that also contain sulfentrazone, but are labeled for yellow nutsedge suppression, not control, due to a lower amount of sulfentrazone in the formulation. Of the various sedge control herbicides, sulfentrazone will provide the quickest control of sedges with injury appearing within a few days of
application. The rate of sulfentrazone will affect the level of control, but it’s not necessary to add a surfactant.

Often the leaves of yellow nutseed will grow more rapidly than the turf during the hottest months of the summer.

Halosulfuron (SedgeHammer, Halosulfuron Pro and others) provides excellent yellow nutseed control with very good turfgrass tolerance. When using products containing 75 percent halosulfuron (i.e. 75DF formulation), add a nonionic surfactant to improve control. Injury to yellow nutseed will appear about two weeks following application. For spot-treatment with SedgeHammer+ mix 0.9 gram of halosulfuron in 1 gallon of water with 0.33 fluid ounces of nonionic surfactant or 0.25 percent (volume of surfactant per volume of water (v/v)) nonionic surfactant. For larger areas, use 0.66 to 1.33 ounces per acre. A new SedgeHammer+ formulation is also available and it already includes surfactant. For spot treatment with SedgeHammer+, use 0.5 ounce per 1,000 square feet. Yukon is another product that contains halosulfuron and dicamba and is labeled for use on sod farms.

Mesotrione (Tenacity) is labeled for postemergence control of yellow nutseed in Kentucky bluegrass, perennial ryegrass, tall fescue and fine fescue, but some preemergence yellow nutseed activity has also been observed with this herbicide although it is not labeled for preemergence control. This herbicide causes a bleaching effect on susceptible weeds. Adding a nonionic surfactant per label recommendations will improve control with mesotrione and two applications of Tenacity will be required for control applied at a two-week interval.
Warm-season turfgrass: In warm-season turf, such as bermudagrass and zoysiagrass, any of the sedge herbicides mentioned above will control yellow nutsedge (check the label to make sure they can be used on your specific turf species). Additionally, other sulfonylurea herbicides including Monument 75WG at 0.56 ounces per acre, Katana at 3.0 ounces per acre, or Certainty at 1.25 ounces per acre may be used in bermudagrass and zoysiagrass. Injury to yellow nutsedge will appear about two weeks following application. Repeat applications of these herbicides will often be needed if regrowth appears. Make sure to add 0.25 percent (v/v) nonionic surfactant to these sulfonylurea herbicides. Other products – including Basagran T/O (bentazon), Blindside (metsulfuron + sulfentrazone), Dismiss South (sulfentrazone + imazethapyr), Image (imazaquin), Tower (dimethenamid), FreeHand (dimethenamid + pendimethalin) and Pennant MAGNUM – are labeled for yellow nutsedge control in warm-season grasses and are used primarily in the South.

In summary, many herbicides are available for sedge control, but herbicide application timing is critical to optimize control. Herbicide applications made prior to tuber production will help reduce the severity of this weed. However, the most common mistake is to make herbicide applications too late in the season after yellow nutsedge is big, spreading by rhizomes and producing tubers. A good yellow nutsedge control program will need to be implemented early in the season and in consecutive years to reduce tuber populations in the soil and prevent the spread of this problematic weed.

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publication AY-336, Turfgrass Weed Control for Professionals, available from the Purdue Extension Education Store (www.the-education-store.com). Contact him at ajpatton@purdue.edu.