

Yellow Nutsedge Control in Turf and Ornamentals

by Aaron Patton and Kyle Daniel

Photos taken by Aaron Patton.

While the growing conditions for turf and landscape plants in Indiana have been less than ideal the past couple of years, they have been more than ideal for certain weeds including yellow nutsedge (*Cyperus esculentus*). Yellow nutsedge (*Cyperus esculentus*) is among the many weeds that have seemed more problematic the past few years. And it looks like with our warm start and hot May, yellow nutsedge will be problematic again this year.

Yellow nutsedge is a troublesome, difficult to control weed often referred to as nutgrass or watergrass. Yellow nutsedge 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 yellow nutsedge.

Life Cycle and Identification

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 (below ground stems) (Fig. 2). Yellow nutsedge grows most actively during the hot months of summer. It emerges (germinates from tubers) (Fig. 3) in April and May in Indiana and grows actively until the first frost. Frost will kill the above ground 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 is a problem in agricultural fields, lawns, landscapes, and nurseries. Yellow nutsedge can be spread anytime soil is moved in the lawn, garden, or landscape including when dividing and planting ornamental plants. It can also spread via equipment (i.e. tractors, tillers, etc.). Thus cleaning equipment is very important, along with, carefully selecting and transplanting nursery stock without this weed propagule.

Yellow nutsedge is most noticeable in the summer. Often the leaves of yellow nutsedge will grow more rapidly than the turf during the hottest months of the summer (Fig. 1) and can be found growing in landscape beds and nursery containers. During spring and fall when temperatures are cooler, yellow nutsedge growth is slower and it is not as easily spotted.

Yellow nutsedge can be identified by the triangular shape of the stem. 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 will produce a golden colored seedhead although the seedhead (Fig. 4) seldom forms in turf that is mown frequently.

Cultural Control Methods

A healthy, dense, vigorous stand of turf that can compete with yellow nutsedge and other weeds is the best control method in lawns. 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, yellow nutsedge can be problematic in well-drained areas, especially if the turf is thin (Fig. 5). In landscape plantings and nursery containers there is often less competition for light and space which combined with frequent irrigation can provide a perfect environment for this weed. Mulching, shading, and continuous cultivation can aide in suppression of the population in landscapes.

Control with Herbicides

Yellow nutsedge is a difficult to control weed with any herbicide and requires multiple herbicide applications for control. Late spring/early summer is the ideal time to control yellow nutsedge. At this time yellow nutsedge is young, actively growing, and most susceptible to herbicidal control and has not yet started to produce tubers. As the summer progresses, nutsedge 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 nutsedge 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 ninety-percent as herbicide applications will injure growing plants but not dormant tubers.

Consider the following steps in order to be successful in reducing yellow nutsedge contamination regardless of the herbicide you choose or where the weed is a problem.

1. **Be sure to read and follow all directions on the herbicide label.**
2. In lawns, do not mow 1-2 days prior to or following the herbicide application.
3. Use caution with herbicides, especially post-emergence, around ornamental plantings.
4. 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 plants are stressed.
5. Four to eight weeks after the first application, repeat steps 2 and 3 if the yellow nutsedge has recovered or regrown from tubers.

Herbicide Options in Turf

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. There are also several herbicides that can be used in the nursery and landscape.

Cool-season Turf

Most of the turf areas in Indiana are comprised of cool-season grasses such as Kentucky bluegrass, perennial ryegrass and tall fescue. 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 (proflam + 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 not the speed of activity. When using products containing sulfentrazone, it is not necessary to add a surfactant.

Halosulfuron (SedgeHammer, Halosulfuron Pro, and others) provides excellent yellow nutsedge control with very good turfgrass tolerance. When using products containing 75% halosulfuron (i.e. 75DF formulation), add a nonionic surfactant to improve control. Injury to yellow nutsedge will appear about two weeks following application. For spot treatment, mix 0.9 gram of halosulfuron in one gallon of water with 0.33 fl oz of nonionic surfactant or 0.25% (volume of surfactant per volume of water (v/v)) nonionic surfactant. For larger areas use 0.66 to 1.33 oz/A. A new SedgeHammer+ formulation is also available and it already includes surfactant, so adding surfactant to this product it isn't necessary. For spot treatment with SedgeHammer+, use 0.5 oz/1,000 ft².

Mesotrione (Tenacity) is labeled for postemergence control of yellow nutsedge in Kentucky bluegrass, perennial ryegrass, tall fescue, and fine fescue. 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 Turf

In warm-season turf areas such as bermudagrass and zoysiagrass in southern Indiana, any of the cool-season 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 (trifloxysulfuron), Katana (flazasulfuron), or Certainty (sulfosulfuron) 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% (v/v) nonionic surfactant to these sulfonylurea herbicides.

Other products — including Basagran T/O (bentazon), Blindside (metsulfuron + sulfentrazone), Tower (dimethenamid), FreeHand (dimethenamid + pendimethalin) and Pennant MAGNUM (metolachlor) — are labeled for yellow nutsedge control in bermudagrass and zoysiagrass.

Herbicide Options in Landscapes and Nursery Containers

Research conducted through the IR4 Ornamental Horticulture Program in 2009 by Dr. Hannah Mathers and Luke Case at Ohio State University found that Pennant Magnum, Freehand, Sedgehammer, and Casoron (dichlobenil) demonstrated very good control of yellow nutsedge.

Pennant MAGNUM can be used for preemergence control of yellow nutsedge in herbaceous and woody ornamentals in nurseries and landscapes. This herbicide cannot be safely used on all plant species, but the herbicide label contains a long list of plants for which it is safe to apply. The list contains many common

landscape plants including boxwood, dogwood, English ivy, geranium, holly, hosta, hydrangea, red maple, viburnum and more.

FreeHand and Tower are other herbicides that can be used for preemergence control of yellow nutsedge in commercial nurseries and landscapes. Freehand is a granular product and Tower is a sprayable product. They contain the same ingredient, but Freehand also contains pendimethalin which is the ingredient in Pendulum. Their herbicide labels contain a list of plants where it is not safe to apply as well as plants safe to apply.

Casoron is a very effective preemergence herbicide for many weeds available as a 4G formulation. Care must be taken when applying Casoron as volatilization easily occurs with warm temperatures (see label). Typically, Casoron should be applied as a granular surface treatment from November to mid-February. Rainfall after application is needed to move the herbicide into the soil. Incorporation via watering-in should not occur past the end of April. Casoron 4G is not recommended for use in container ornamentals but can be used under pots on bare ground blocks/beds, rock covered ground blocks/beds and other areas typically found in nursery production areas, is appropriate.

Postemergence options for yellow nutsedge control in landscapes include SedgeHammer as a directed spray around established woody ornamental plants. SedgeHammer should not be sprayed directly on the leaves of desirable plants as it is known to cause injury to azalea, Japanese holly, and other desirable landscape plants. Use a spray shield to help safely apply the herbicide to only the weed.

Certainty herbicide can also be used for postemergence control of yellow nutsedge in landscapes and nurseries. Certainty can be applied as a directed spray around ornamental species in landscaped areas. The herbicide label for this product also provides detailed information on which ornamental and ground cover species can tolerate an over-the-top application. Many commonly used landscape plants including azalea, boxwood, holly, juniper, *Liriope*, and more are tolerant of this herbicide.

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. Prevention is the key cultural control for yellow nutsedge. A good yellow nutsedge herbicidal control program will need to be implemented early in the season and in consecutive years in order to reduce tuber populations in the soil and prevent the spread of this problematic weed.

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Fig. 1. Yellow nutsedge is a problematic turf weed that is difficult to control. Yellow nutsedge is most visible in the summer months when it grows more quickly than the surrounding turf.

Fig. 2. This yellow nutsedge plant taken from a landscape bed is spreading both by a rhizome (left) and a tuber being formed (bottom, swollen root tip).

Fig. 3. A yellow nutsedge plant visible in April in Indiana shortly after emerging in a bare soil area.

Fig. 4. Yellow nutsedge seedhead.

Fig. 5. Yellow nutsedge invading thin turf during the summer months when the turf is stressed.