

Lawn Care Pro Series: Yellow nutsedge control

University of Nebraska-Lincoln Turfgrass Science Program | turf.unl.edu Pub. 2012c Pro Series

Yellow nutsedge (*Cyperus esculentus*) is a common, persistent, and troublesome weed in lawns and landscapes in Nebraska. This is especially true from Kearney (NE) east into Iowa. Yellow nutsedge is a problem in lawns because of rapid growth during the summer months, a upright growth habit, and light green color, resulting in a nonuniform turf stand (Figure 1). In gardens and landscapes, it will emerge through bark or rock mulches and landscape fabric in shrub plantings and vegetable and flower beds throughout the growing season.



Figure 1. Accelerated growth and lighter green color makes yellow nutsedge easily visible and obtrusive in most lawns.

Yellow nutsedge thrives in waterlogged soil and its presence often indicates poor drainage, excessive irrigation frequency and/or quantity, or sprinklers/valves are damaged and leaking. Once this weed becomes established, it can survive and persist with no irrigation and has been documented to survive prolonged drought. This explains why yellow nutsedge is especially problematic in dry years in Nebraska. More than 150 sedge species can be found in Nebraska, but none are as problematic as yellow nutsedge in lawns and gardens. The nutsedge problem is not isolated to the upper Midwest with documented occurrence in 48 of the 50 states, including Alaska, and several Canadian provinces. This is a species capable of tolerating extremes in temperature and precipitation, but is generally found in lower elevations.

Identification

Although yellow nutsedge is often referred to as "yellow nutgrass" and the leaves resemble those of a grass, it is true sedge and not a grass. The leaves are thicker and more rigid than most grasses and are arranged in sets of three at the base, whereas grass leaves are opposite in sets of two. Nutsedge stems are solid, and when looked at in cross section, they are triangular; grass stems are hollow and round, and in cross section they are almost flat or oval. One of the common references for identification of sedges is "sedges have edges". By rolling the stem

between your fingers, the triangular shape or "edge" of the stem is easily recognized.

Yellow nutsedge reproduces by underground storage organs called tubers, which are incorrectly called "nuts" or "nutlets," thus the origin of its common name. These tubers are produced on rhizomes (underground stems) that grow as deep as 8 to 14 inches below the soil surface (Fig. 2). Buds on the tubers sprout and grow to form new plants; thus individual nutsedge plants eventually form patches that can range up to 10 feet or more in diameter. Yellow nutsedge produces round, smooth, brown



Figure 2. Yellow nutsedge reproduces from tubers deep in the soil.

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or black tubers that are about 1/2 inch in diameter at maturity. Only one tuber is formed at the end of a rhizome. Tubers of yellow nutsedge have a pleasant almond taste. It has been estimated that, if planted in a pure stand, yellow nutsedge would produce approximately the same yield as potato.

Life Cycle

Yellow nutsedge is a perennial plant. The leaves and flowering stalks die back in fall and as temperatures decrease, but tubers and rhizomes survive in the soil and sprout the following spring when soil temperatures remain above 43°F (Fig. 3). The majority of tubers can be found in the top 6 inches of soil where they can survive for 1 to 3 years. In field crops, most plants sprout from tubers, and seeds do not contribute much, if any, to the spread of nutsedge. However, once the mother plant sprouts from tubers, yellow nutsedge will also spread via rhizomes during a growing season.

Cultural Control

Any cultural practice to maintain turf density will reduce yellow nutsedge. Mowing heights at 3.0 to 3.5" throughout the year, frequent mowing, fall fertilization, deep and infrequent irrigation, and aerification to reduce compaction should all improve turf health and thus reduce yellow nutsedge. Additionally, increasing shade by planting larger shrubs and perennials in landscape beds as well as proper timing and depth of mulching should also suppress nutsedge growth.

Control with Herbicides

Removal or eradication strategy post emergence, including hand weeding and herbicide applications is most successful if done prior to the longest day of the year (June 21). If herbicides are used, multiple applications will improve control of later germinating nutsedge and/or nutsedge not completely controlled with the initial application.

Bentazon (Basagram), halosulfuron (SedgeHammer, formerly Manage), and most recently sulfentrazone (Dismiss) are all effective postemergence herbicides. Sulfosulfuron (Certainty) is no longer labeled for use on cool-season grasses. Current recommendations from UNL include halosulfuron for postemergence (POST) control. Early POST control is excellent with halosulfuron. Spraying after June 21st with any systemic herbicide, could stimulate further germination of tubers, necessitating additional applications. Contact products, such as sulfosulfuron do not appear to release the dormancy of the daughter tubers, but these tubers will germinate the following spring/summer.

Herbicides have been recently identified that have good to excellent preemergence (PRE) control of yellow nutsedge. Herbicides available to professionals with documented PRE activity on yellow nutsedge include sulfentrazone or sulfentrazone plus prodiamine (Echelon). Mesotrione (Tenacity) also has limited PRE control of yellow nutsedge, but our recent data

Table 1. Preemergence yellow nutsedge control in spring-seeded tall fescue. College Park, MD 2007.

Herbicides ^y	Rate lb ai/A	Yellow nutsedge coverage		
		31 May	20 Jun	1 Aug
		————— % —————		
Tenacity 4SC	0.25	41.7 b ^z	43.8 b	21.3 b
Tenacity 4SC	0.125+0.125	21.7 c	20.3 c	11.0 c
Tenacity 4SC	0.187+0.187	12.0 d	1.8 d	3.3 cd
Dismiss 4F	0.125+0.125	0.2 e	0.0 d	0.1 d
Dismiss 4F	0.25	2.8 e	2.9 d	3.4 cd
Echelon 4SC	0.57	5.8 e	7.8 d	9.5 c
Echelon 4SC	0.75	2.1 e	2.5 d	5.8 cd
Untreated	-	100.0 a	81.7 a	65.0 a

^yTreatments were initially applied on 20 April and sequentials were applied on 21 May 2007. All mesotrione treatments were reapplied on 1 August 2007. Mesotrione was tank-mixed with 0.25% NIS on 21 May and 1 August 2007.

^zMeans in a column followed by the same letter are not significantly different based on Fisher's least significant difference test (P≤0.05).

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show that Tenacity will provide adequate yellow nutsedge control in spring seedings on bare soil (Reicher and Sousek, 2011a and b). Most of our recommendations on PRE control are based primarily on work from University of Maryland and is summarized in Table 1 (Dernoeden and Fu, 2007).

Current work at UNL is investigating yellow nutsedge biology, ecology and strategies for control. Previous work concentrated on traditional herbicide timings and chemistries. Work is now concentrating on a better understanding of yellow nutsedge and optimizing chemical control through better application timing approaches.

References:

1. Dernoeden, P. H. and J. Fu. 2007. Preemergence yellow nutsedge control in spring seeded tall fescue with Tenacity, Dismiss and Eschelon, 2007. P 49-51 Maryland Research Handbook. <http://www.psla.umd.edu/faculty/Dernoeden/07ResearchHandbook.pdf>
2. Reicher, Z. and M. Sousek. 2011a. Herbicides for spring seeding of tall fescue: 2011. <http://turf.unl.edu/ResearchReports/Herbicidesforspringseedingoftallfescue2011.pdf>
3. Reicher, Z. and M. Sousek. 2011b. Herbicides for spring seeding of Kentucky bluegrass. <http://turf.unl.edu/ResearchReports/herbicidesoverspringseededKBG2011.pdf>

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Figure 3. Each tuber (arrow) of yellow nutsedge can germinate multiple times, especially if the original plant dies from environmental conditions like frost or from herbicides.



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