

Controlling Yellow Nutsedge With Sedgehammer+

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SUMMARY: Yellow nutsedge (*Cyperus esculentus*) is the primary sedge species found in Indiana and it is a tough to control perennial weed in turf. Yellow nutsedge is especially problematic in wet, poorly drained areas. Unfortunately, there are no cultural controls (mowing, fertilizer, etc.) effective at combating this weed other than efforts to reduce soil moisture, thus herbicides are required for control. Regardless of herbicide selection, yellow nutsedge will require multiple applications for control. SedgeHammer (halosulfuron) is an effective yellow nutsedge herbicide that is safe on all turf species but requires the addition of a non-ionic surfactant for best results. The objective of this experiment was to evaluate a new formulation of Sedgehammer+ (halosulfuron + surfactant), which contains a surfactant, for control of yellow nutsedge. SedgeHammer+ provided control higher than Dismiss (sulfentrazone) at 8 oz/A after a single application, but following the sequential application of both herbicides on 12 July their control was equivalent for the remainder of the growing season. These results confirm the efficacy of a new halosulfuron formulation (SedgeHammer+) is effective for controlling yellow nutsedge. The product became available in 2011 and is sold in prepackaged sizes for treating 1,000 ft² of turf.

Yellow nutsedge (*Cyperus esculentus*) is the primary sedge species found in Indiana and it is a tough to control perennial weed in turf. Yellow nutsedge is especially problematic in wet, poorly drained areas. Therefore, reducing irrigation and promoting drainage will help reduce yellow nutsedge, but it will survive in areas not overwatered or wet.

Different than broadleaf weeds and grasses, sedges have a triangular shaped stem and have leaves arranged in groups of three. Yellow nutsedge has shiny, green leaves, a finely-pointed leaf tip, and no ligule or collar (unlike grasses). The seedhead for yellow nutsedge is not often visible in mown areas, but when produced in unmown areas can be easily identified by its yellow or golden color.

Yellow nutsedge emerges in Indiana in late April to early May but often does not become visible in

turf until late May. Most often, yellow nutsedge is identified in the summer months when the growth rate of its yellow-green leaves exceeds that of the surrounding turf areas making it easily visible.

The survival structure from which yellow nutsedge germinates and emerges from annually each spring is a tuber (also called a nutlet). These tubers are produced by the plant in the soil about 4-8 inches deep at the end of each summer. Weed control programs with herbicide applications before mid-summer (July) are most effective. Unfortunately, there are no cultural controls (mowing, fertilizer, etc.) effective at combating this weed other than efforts to reduce soil moisture, thus herbicides are required for control. Mechanical or hand removal of sedges can be effective but only if the underground tubers are removed along with the above ground foliage.

Regardless of herbicide selection, yellow nutsedge will require multiple applications for control. SedgeHammer (halosulfuron) is an effective yellow nutsedge herbicide that is safe on all turf species but requires the addition of a non-ionic surfactant for best results. The objective of this experiment was to evaluate a new formulation of Sedgehammer+ (halosulfuron + surfactant),

ADDITIONAL INDEX WORDS:

Cyperus esculentus; Dismiss; halosulfuron; sulfentrazone.

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which contains a surfactant, for control of yellow nutsedge.

MATERIALS AND METHODS

The experiment was conducted at the W.H. Daniel Turfgrass Research and Diagnostic Center in West Lafayette, IN. The area was an established perennial ryegrass blend with a history of yellow nutsedge pressure. Experimental design was randomized complete block with four replications and an individual plot size of 25 ft². Plots were mown three time per week at 2 inches. Plots were treated with herbicides on 2 June and 12 July. Herbicides were applied in 87 gpa water with a CO₂-pressurized sprayer at 30 psi. Yellow nutsedge was visually rated. Injury to ryegrass was rated on a 9 to 1 scale with 9 = no injury, 7 = acceptable injury, and 1 = totally brown turf. All data were analyzed using SAS (SAS Institute, Inc). Means separated using Fisher’s protected least significant difference when F tests were significant at α=0.05.

RESULTS AND DISCUSSION

SedgeHammer+ provided effective control of yellow nutsedge throughout this experiment (Table 1). Although EdgeHammer+ was not compared to SedgeHammer 75DF in this experiment, others have confirmed these products provide similar efficacy (personal communication, Michigan State University). SedgeHammer+ provided control greater than Dismiss (sulfentrazone) at 8 oz/A after a single application, but following the sequential application of both herbicides on 12 July their control was equivalent for the remainder of the growing season (Table 1). Some injury was observed on 16 June (two weeks after the first application) from SedgeHammer+ (Table 2) although this injury was acceptable and short-lived. These results confirm the efficacy of a new halosulfuron formulation (SedgeHammer+) is effective for controlling yellow nutsedge. The product became available in 2011 and is sold in repackaged sizes for treating 1,000 ft² of turf.

Table 1. Herbicide effect on yellow nutsedge coverage.

Treatment ^a	rate	Yellow Nutsedge Coverage					
		16 June	30 June	12 July	27 July	11 Aug	24 Aug
		%					
SedgeHammer+	19.84 oz/A	0 b ^b	2 b	6 b	2 b	1 b	1 b
Dismiss	8 oz/A	18 a	25 a	23 a	0 b	0 b	1 b
+NIS	0.25 % v/v						
Untreated		19 a	27 a	28 a	30 a	48 a	46 a
P-value		0.0339	0.0123	0.0246	<0.0001	0.0013	0.0009

^a Treatments were applied 2 June and 12 July over the same plots.

^b Within columns, means followed by the same letter are similar.

Table 2. Herbicide effect on injury to perennial ryegrass.

Treatment ^a	rate	Injury	
		16 June	30 June
SedgeHammer+	19.84 oz/A	8 b ^b	9
Dismiss	8 oz/A	9 a	9
+NIS	0.25 % v/v		
Untreated		9 a	9
P-value		<0.0001	NS

^a Treatments were applied 2 June and 12 July over the same plots.

^b Within columns, means followed by the same letter are similar.