

Strategies for Nutsedge Control in Turf
Cactus Clippings
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Since my last article about nutsedge control four years ago, a few things can be improved in the battle to control the “world’s worst weed”. I’ve modified my June 2009 article slightly to update the strategies to reduce nutsedge in turf. On the regulatory front, the use of MSMA (monosodium methylarsonate) on golf courses, sod farms, and highway rights of way may be allowed to continue indefinitely. The use pattern on turf was to be discontinued after December 31, 2013 following reviews of the product; however, the reviews were not completed so its use will continue to be allowed. MSMA has NOT been permitted for use on residential turf since December 31, 2010.

The directions for using MSMA on golf courses allow only one broadcast application on newly constructed courses. Applications on existing courses are limited to spot treatment (100 sq ft per spot), not to exceed 25% of the total course in one year. On sod farms, two broadcast applications are allowed per crop. A 25 foot buffer strip is required for fields bordering permanent water bodies.

The U.S. EPA agreement limiting MSMA use and casting uncertainty for the future will alter the approach to controlling nutsedge economically in turfgrasses in the desert for the long-term. MSMA has been an inexpensive tool for initiating purple nutsedge control when it first emerges in turf during the spring through early summer. It causes rapid foliar chlorosis followed by desiccation. MSMA has no preemergence soil activity and requires multiple applications for the newly emerging nutsedge. These continuous applications before the summer solstice should begin exhausting the underground tubers of carbohydrate reserves as they spend energy to constantly put out new shoots that get burned down by the MSMA.

Another herbicide to consider for replacing MSMA may be the use of Dismiss CA* (sulfentrazone) that causes somewhat similar nutsedge leaf burning when applied postemergence. The duration of the resultant burndown can last 7 to 14 days but in tandem with constant low mowing, nutsedge populations can be stressed.

Following the early season applications of MSMA and Dismiss CA along with mowing, at the end of June and around the 4th of July holiday, the highly effective ALS-inhibiting (acetolactate synthase enzyme) herbicides can begin to be applied for postemergence control of the purple nutsedge. The commercially available ALS-herbicides that control nutsedge are SedgeHammer* (halosulfuron), Image* (imazaquin), Monument* (trifloxysulfuron), Certainty* (sulfosulfuron), and Katana* (flazasulfuron) (Table). Newer combination herbicide products can be included at this timing of application – Tribute Total* (halosulfuron plus foramsulfuron [Revolver*] plus thiencarbazone) and Dismiss South* (sulfentrazone plus imazethapyr). Imazethapyr is a related herbicide in the same family as Image. The timing of applications of these herbicides takes advantage of the shortening day-lengths when it is expected of perennial weeds to begin translocating photosynthates to the developing tubers. The ALS herbicides effectively penetrate the foliage and move to the developing tubers and prevent their further maturation. Results of several nutsedge control experiments conducted with these products are available in the University of Arizona College of Agriculture and

Life Sciences annual publication Turfgrass, Landscape and Urban IPM Research Summary (<http://turf.arizona.edu>).

The “1-2 punch” of MSMA/Dismiss CA followed by an ALS-herbicide should effectively begin to reduce purple nutsedge populations in turfgrasses. Of course, the degree of the infestation and turf management practices contribute to the level of control achieved. A thick and high population of nutsedge and high soil moisture content will make it more challenging to reduce the infestation. Generally, most of the herbicide labels recommend a sequential application at 4 to 6 weeks after the first application. SedgeHammer and Image might provide only 2 to 4 weeks of control and then needing a second application. Monument, Katana, and Certainty have given longer intervals beyond 4 to 6 weeks. The July followed by a second mid-August application of ALS-herbicides should reduce nutsedge going into the fall overseeding season. Repeat the same program of MSMA/Dismiss CA plus mowing followed by only two July-August ALS-herbicide applications in subsequent summers until manageable and acceptable levels are achieved.

Limiting ALS-herbicides to only two summertime applications for nutsedge control will reduce the chances of purple nutsedge developing resistance to the class of herbicides. Switching among the brands of ALS-herbicides and increasing the number of seasonal applications is targeting the same sites for the same modes of herbicide action and result in lesser nutsedge control. Additionally, do not expect some of the ALS-herbicides (also commonly referred to sulfonylurea [SU] herbicides) such as Monument or Katana to control nutsedge when applied at lower rates to remove overseeded ryegrass during spring transition. The sub-lethal dose for nutsedge control will contribute to the chance of herbicide resistance development.

The MSMA/Dismiss CA followed by ALS-inhibiting herbicides is an effective strategy of multiple postemergence applications when used in combination with low height of cut and frequent mowing. Preemergence herbicides generally offer better yellow nutsedge control. Pennant Magnum* (s-metolachlor) and Tower* (dimethenamid) generally will not provide acceptable control of purple nutsedge. Dismiss CA and several other pre-mix products that contain sulfentrazone - Surge*, Q-4Plus*, and Solitare* might offer better yellow nutsedge suppression or reduction. These sulfentrazone-containing products may only cause temporary and slight burning of nutsedge foliage

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<i>Table.</i> Herbicides for nutsedge control in turf							
SedgeHammer* halosulfuron 75 WG	Tribute Total* halosulfuron + foramsulfuron + thiencarbazone 60.5% WDG	Monument* trifloxysulfuron 75 WG	Certainty* sulfosulfuron 75 WDG	Image* imazaquin 70 DG	Katana* flazasulfuron 25 WG	Dismiss South* sulfentrazone + imazethapyr 4SC	Dismiss CA* sulfentrazone 4 SC
0.062 lb a.i./A 1.3 oz prod/A Limit not stated	3.2 oz prod/A Limit of 6.4 oz/A per year	0.025 lb a.i./A 0.53 oz prod/A Limit of 1.7 oz/A per year	0.06 lb a.i./A 1.25 oz prod/A Limit of 2.66 oz/A per year	0.5 lb a.i./A 11.5 oz prod/A Limit not stated Add MSMA	0.047 lb a.i./A 3.0 oz prod/A Limit 9 oz/A per year	9-14.4 oz prod/A Limit not stated	0.375 lb a.i./A 4-12 oz prod/A Limit of 12 oz/A per 12 months