

Life After MSMA

*Cheryl A. Wilen, University of California Cooperative Extension and UC Statewide IPM
Program. 5555 Overland Ave. Suite 4101, San Diego, CA 92123
Email: cawilen@ucdavis.edu*

MSMA (Mono Sodium Methane Arsonate) is an older postemergent herbicide used primarily for weed control in turf for control or suppression of dallisgrass crabgrass, sedges, kikyugrass, oxalis, other hard to control weeds. It is safe on bermudagrass, bluegrass, zoysia but on tall fescue may yellow. Currently, there are only 4 turf/landscape products registered in California that are not mixtures with other herbicides:

- DREXEL DREXAR 530 (35.8%)
- DREXEL MSMA 6 PLUS (47.6%)
- TARGET 6 PLUS (48.3%)
- TARGET 6.6 (51%)

Because arsonate is a component of this herbicide, it was re-reviewed by EPA because of potential exposure to arsonate through drinking water. Subsequent to that review, new restrictions were implemented to prevent exposure to inorganic arsenic in drinking water. The restrictions include limiting use in areas of particularly vulnerable ground water, using buffer zones around surface water bodies, limiting the number of applications, and restricting golf course use to spot treatment only.

The current EPA ruling as it applies to turf and landscape uses is that MSMA is allowed on golf courses, sod farms and highway rights of way with sales until December 31, 2012 and material can be used only until December 31, 2013. During 2012 EPA will evaluate the scientific information available on any risk posed by inorganic arsenic and if the evaluation finds no health concern at the doses of exposure of normal use, the use of MSMA will continue beyond 2013.

Pest control advisers and applicators should be aware of the changes on the current label:

- **Golf courses:**
 - One broadcast application allowed on newly constructed courses.
 - Application on existing courses limited to spot treatment (100 sq ft per spot), not to exceed 25% of the total course in one year.
- **Sod farms:**
 - Two broadcast applications allowed per crop.
 - 25 foot buffer strip required for fields bordering permanent water bodies.
- **Other MSMA Uses Not Allowed** (sales stopped in 2009, usage stopped Dec.31, 2010).
 - Residential turf
 - Drainage ditch banks, railroad, pipeline, and utility rights of way, fence rows, storage yards and similar non-crop areas
 - Others

With the loss of MSMA, other herbicide options may be used but the site, the turf species, and weed spectrum needs to be considered. Possible alternatives¹ to MSMA include:

- Acclaim - fenoxaprop-p-ethyl (ACCase inhibitor)
- Certainty – sulfosulfuron (sulfonylurea)
- Dismiss – sulfentrazone (aryl triazolinone)
- Drive XLR8 – quinclorac (quinolinecarboxylic acid)
- Monument – trifloxysulfuron-sodium (sulfonylurea)
- Revolver - formasulfuron (sulfonylurea)
- Sedgehammer - halosulfuron (sulfonylurea)

The tables below list the turf species where the herbicides may be safely used and some weeds that are listed on the label as being controlled. This list was developed because the herbicides are safe on the same turf species as MSMA or have an expanded list of turf species where they are safe. They also control or suppress some of the weeds that MSMA was historically used for in turf such as crabgrass, dallisgrass, and sedge species. Note that there are no exact matches for MSMA but knowing the turf species and weed spectrum will help find a suitable replacement. In some cases, these herbicides will control a broader weed spectrum.

A drawback is that these herbicides should not be used without considering a rotational plan. Four of the herbicides on the list are sulfonylureas and resistance may develop if these herbicides are used exclusively.

Turf Species Safety²

Herbicide	Active Ingredient	Bermuda-grass (common)	Bermuda-grass (hybrid)	Buffalo-grass	Creeping Bentgrass	Fine Fescue	Kikuyu-grass
Acclaim Extra	fenoxaprop-p-ethyl				T	T	
Certainty	sulfosulfuron	T	T	T	T		T
Dismiss CA	sulfentrazone	T	T	T	T	T	T
Drive XLR8	quinclorac	T	M		M	M	N
Monument	trifloxysulfuron-sodium	T	T				
Revolver	formasulfuron	T	T	T			
Sedgehammer	halosulfuron-methyl	T	T		T	T	T
MSMA	Mono Sodium Methane Arsonate	T	T				N

¹ Products discussed are for informational use only. Their mention anywhere in this document does not constitute a recommendation or endorsement.

² This is not an exclusive list of turfgrass species for herbicide safety for each product. Consult label for more information and sites where they may be used.

Turf Species Safety

Herbicide	Ky Bluegrass	Per. Rye	Rough Bluegrass	Seashore Paspalum	St. Augustine	Tall Fescue	Zoysia-grass
Acclaim Extra	T	T				T	T
Certainty	T		N	T	T	N	T
Dismiss CA		T	T	T	T	T	T
Drive XLR8	T	T	M	M	N	T	T
Monument						N	T
Revolver							T
Sedgehammer	T	T		T	T		T
MSMA	T				N	M/N	T

T=Tolerant

M=Moderately tolerant

N=Not tolerant

Weeds Controlled or Suppressed³

Herbicide	Barnyard-grass	Common bermuda-grass	Dallis-grass	Foxtails	Goose-grass	Johnson-grass (rhizome)	Johnson-grass (seedling)	Kikuyu-grass
Acclaim Extra	C	S		C	C	S	C	
Certainty			S					
Dismiss CA					C			
Drive XLR8	C			C				C
Monument			S					
Revolver			S		C	C		
Sedgehammer								
MSMA	C		C		C		C	

Weeds Controlled or Suppressed

Herbicide	Kyllinga spp.	Large crabgrass	Panicum spp.	Purple nutsedge	Smooth crabgrass	Tall fescue	Yellow nutsedge
Acclaim Extra		C	C		C		
Certainty	C/S			C/S		C	C/S
Dismiss CA	C/S			C/S			C/S
Drive XLR8		C			C		
Monument		S		S	S	C	C
Revolver		S				C	
Sedgehammer	S			C			C
MSMA		C			C		C

C=Control

S=Suppression

³ This is not an exclusive list of weed species controlled or suppressed for each product. Consult label for additional information and rates.