

POSTEMERGENTS AVAILABLE FOR CONTROL OF NUTSEGE IN TURF

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Yellow nutsedge, a hard to kill weed in turf, is an increasing problem for turf managers primarily because of infestation from agricultural areas.

It is estimated that 10 to 15 percent of the crop acreage in the northeast is infested with this weed. Conversion of crop lands to sod farms and the use of this soil for topsoil and topdressing has accelerated the spread of nutsedge.

Yellow nutsedge (*Cyperus esculentus* L.) is a perennial weed which reproduces by seed,

rhizome, and tuber (nutlet). Tubers start to grow in the spring and each may produce several rhizomes. In Rhode Island, these rhizomes terminate as emerging plants by late May or June and produce more rhizomes.

These plants are easily identified by their single, triangular stem with slender, yellow-green blades which grow faster and taller than mowed turfgrass.

The rhizomes terminate, in August and September, and form a tuber. These tubers are ready to

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TABLE 1. Effect of herbicides, rates and treatment number, time interval and dates on nutsedge control and turfgrass injury when applied to developing Kentucky bluegrass sod in 1978.

Herbicide	Rate lb ai/A	Treatment		Percent Nutsedge Control ^a		Maximum Turfgrass Injury ^b	
		Number	Interval in weeks	(treatment started)		(treatment started)	
				June 30	July 21	June 30	July 21
Bentazon	.5	1	0	55	83	0.2	0.0
Bentazon	.5	2	1	99	97	0.2	0.2
Bentazon	.5	2	2	81	—	0.1	—
Bentazon	.5	2	3	95	—	0.1	—
Bentazon	.5	2	4	87	—	0.3	—
Bentazon	.5	3	1	99	—	0.0	—
Bentazon	.75	1	0	64	95	0.1	0.0
Bentazon	.75	2	1	98	99	0.3	0.0
Bentazon	.75	3	1	99	—	0.0	—
Bentazon	1.0	1	0	85	96	0.0	0.4
Bentazon	1.0	2	1	99	99	0.1	0.2
Bentazon	1.0	2	2	99	—	0.2	—
Bentazon	1.0	2	3	99	—	0.3	—
Bentazon	1.0	2	4	96	—	0.0	—
Bentazon	1.0	3	1	100	—	1.9	—
DSMA	3.6	1	0	62	99	0.5	3.3
DSMA	3.6	2	1	99	100	2.1	3.5
DSMA (201)	3.6	2	1	100	—	1.9	—
DSMA (301)	3.6	2	1	99	—	2.3	—
DSMA (401)	3.6	2	1	99	—	2.6	—
DSMA (501)	3.6	2	1	100	—	2.2	—
DSMA (601)	3.6	2	1	99	—	1.7	—
MSMA	1.5	1	0	60	94	0.4	1.9
MSMA	1.5	2	1	100	99	2.5	3.1
Bromoxynil	.25	1	0	0	—	0.0	—
Bromoxynil	.5	1	0	14	—	0.0	—
Bromoxynil + Dicamba	.5+.125	1	0	9	—	0.2	—
Bromoxynil + Bentazon	.5+1.0	1	0	90	—	0.2	—
DSMA	1.8	2	1	—	99	—	1.1
DSMA + Bentazon	1.8+.5	2	1	—	99	—	0.6
DSMA + Bentazon	3.6+1.0	2	1	—	100	—	3.0

^abased on plant counts June 28 and August 28. Untreated plots averaged 11.5 nutsedge plants per sq. ft.

^bscale 0 to 10 (10 = brown) maximum through August.

sprout the following season and account for much of the increase in the nutsedge problem.

Since yellow nutsedge is hard to kill and its presence is increasing in turfgrass areas, there is a need to find herbicides that will provide selective control.

Sixteen tests were conducted from 1971 through 1978 on Kentucky bluegrass being grown for sod. The turf was maintained at a height of about 1½ inches and varied in age from 2 to 18 months.

The herbicides studied were bentazon (Basagran, BASF Wyandotte) and various metha-

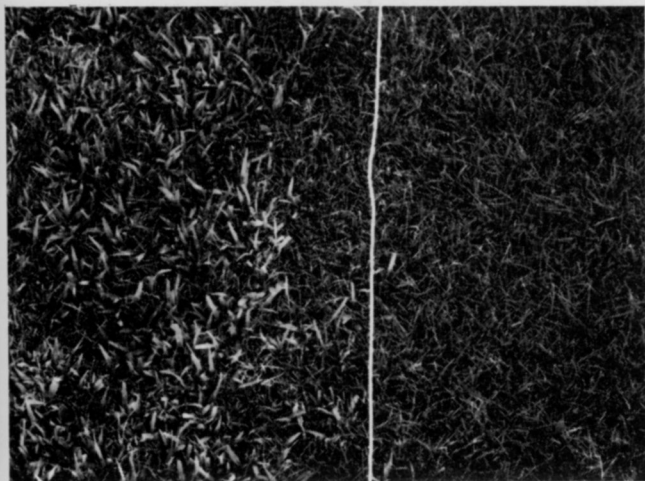
Conversion of crop lands to sod farms and the use of this soil for topsoil and topdressing has accelerated the spread of nutsedge.

nearsonates (MSMA, DSMA, MAMA, AMA). They were applied to replicated plots and were applied as sprays using 50 to 172 gallons of water per acre. Postemergence treatments were applied from May to August. Nutsedge emergence usually started in late May or early June.

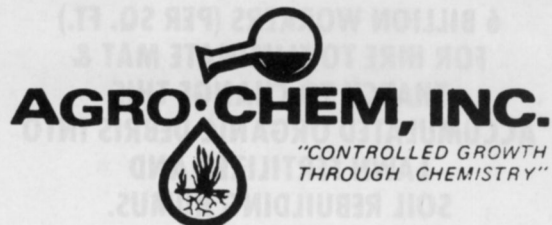
Visual estimates of grass stands or injury were recorded during the tests. Nutsedge plant counts (up to 53 per square foot) or estimates of percent cover (up to 55 percent) were made in August or September. Control was determined by comparing treated to untreated plots. Four test areas were observed the year following treatment to determine the change in the nutsedge population under sod conditions.

Results of Studies

Our studies have shown that certain treatments of bentazon and methanearsonates provide ex-



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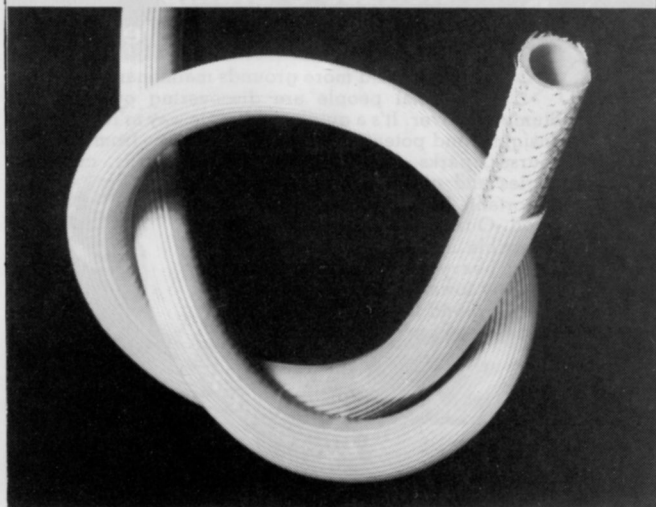
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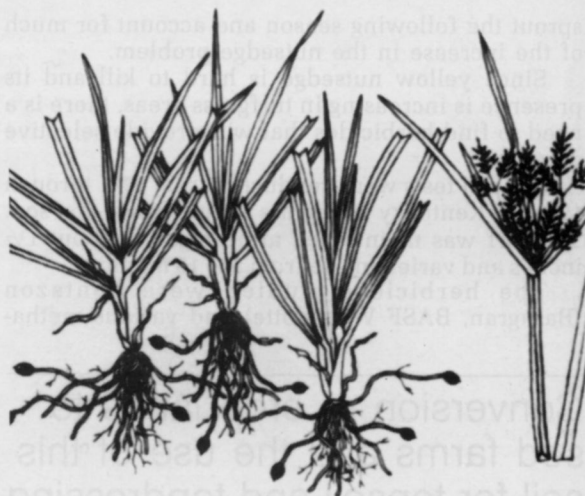
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Nutsedge plant with rhizomes formed and nutlets starting.

cellent postemergence control of nutsedge without injuring Kentucky bluegrass.

Two applications of a herbicide at low rates and at 10-day intervals were usually more effective than a single application at higher rates. In these studies, we found that as the season progressed from June through July less herbicide and/or fewer applications were needed for control. And with methanearsonates, nutsedge was easier to control when growing in competition with grass than in open soil areas.

Kentucky bluegrass has shown greater tolerance, especially at high rates, to bentazon than to methanearsonates. Comparative results were obtained from the liquid and wettable powder formulations of bentazon, and the 50 to 172 gallon per acre spray applications of bentazon or methanearsonates.

We also discovered that there was a natural decrease in the nutsedge population in untreated sod areas the following season. The reduction ranged from 45 to 98 percent. There was an additional reduction, 89 to 100 percent, in areas treated the previous season with bentazon and methanearsonates. However, even with a reduction of 89 percent, there were still about three plants per square foot.

Comments

At present the methanearsonates such as AMA, DSMA, MAMA and MSMA are available for the control of nutsedge in turfgrass. They can be used at the same rates and with the same techniques as suggested for postemergence crabgrass control.

Bentazon is a product of the BASF Wyandotte Corp. call "Basagran". It is used as a herbicide in soybeans and is available for use on turfgrass. Because of its effectiveness the tolerance of Kentucky bluegrass and its value in seedling broadleaf weed control, this herbicide should prove very useful. Our data suggest good results from two applications at a rate of one half to one pound per acre spaced 10 days apart in July. **WTT**



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