Recent Developments in Nursery Herbicides

AUBURN

FORESTRY AND WILDLIFE SCIENCE

Research Reports

- 05-02 - Flumioxazin and dimethenamid
- 05-03 - Shielded Applications of Sulfonylureas
- 06-01 - MSMA
- 06-02 - Halsulfuron methyl in oak seedbeds
- 06-03 - Shielded Applications of Sulfonylureas Part II
- 06-04 - Flumioxazin and dimethenamid Part II
- 07-01 - A Spurge Trial in Alabama
- 07-02 - Tolerance of Young Loblolly Pine Seedlings to MSMA: Part II
- 07-03 - Shielded Applications of Sulfonylurea Herbicides in Loblolly Pine Seedbeds: Part III

Two directed herbicides

- Metsulfuron-methyl
- For prostrate spurge

- Halosulfuron-methyl
- For nutsedge

Vegetation Manager™

METSULFURON METHYL DF

DRY FLOWABLE

SPECIMEN LABEL

ACTIVE INGREDIENT:
METSULFURON METHYL
METHYL 2-[[[[(4-METHOXY-6-METHYL-1,3,5-TRIAZIN-2-YL)AMINO]-CARBONYL]AMINO]SULFONYL]BENZOATE 60%
INERT INGREDIENTS: 40%
TOTAL: 100%

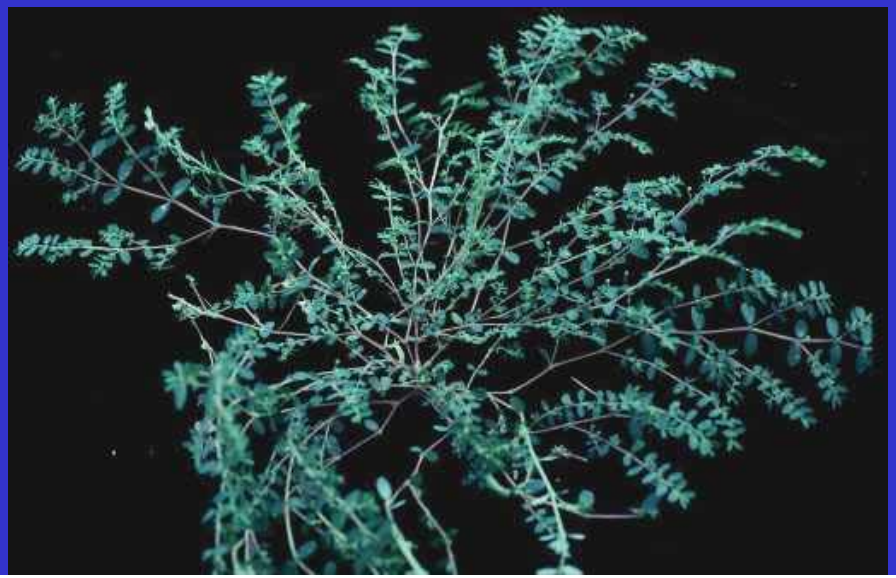
DO NOT USE ON FOOD OR FEED CROPS EXCEPT AS RECOMMENDED

Sedgehammer™

TURF HERBICIDE

SEDGEHAMMER is a selective herbicide for the control of nutsedge and other weeds in turfgrass and landscaped areas

	% by Wt.
ACTIVE INGREDIENT:* Halosulfuron-methyl	75.0%
OTHER INGREDIENTS:	25.0%
Total:	100.0%



Directed Trials

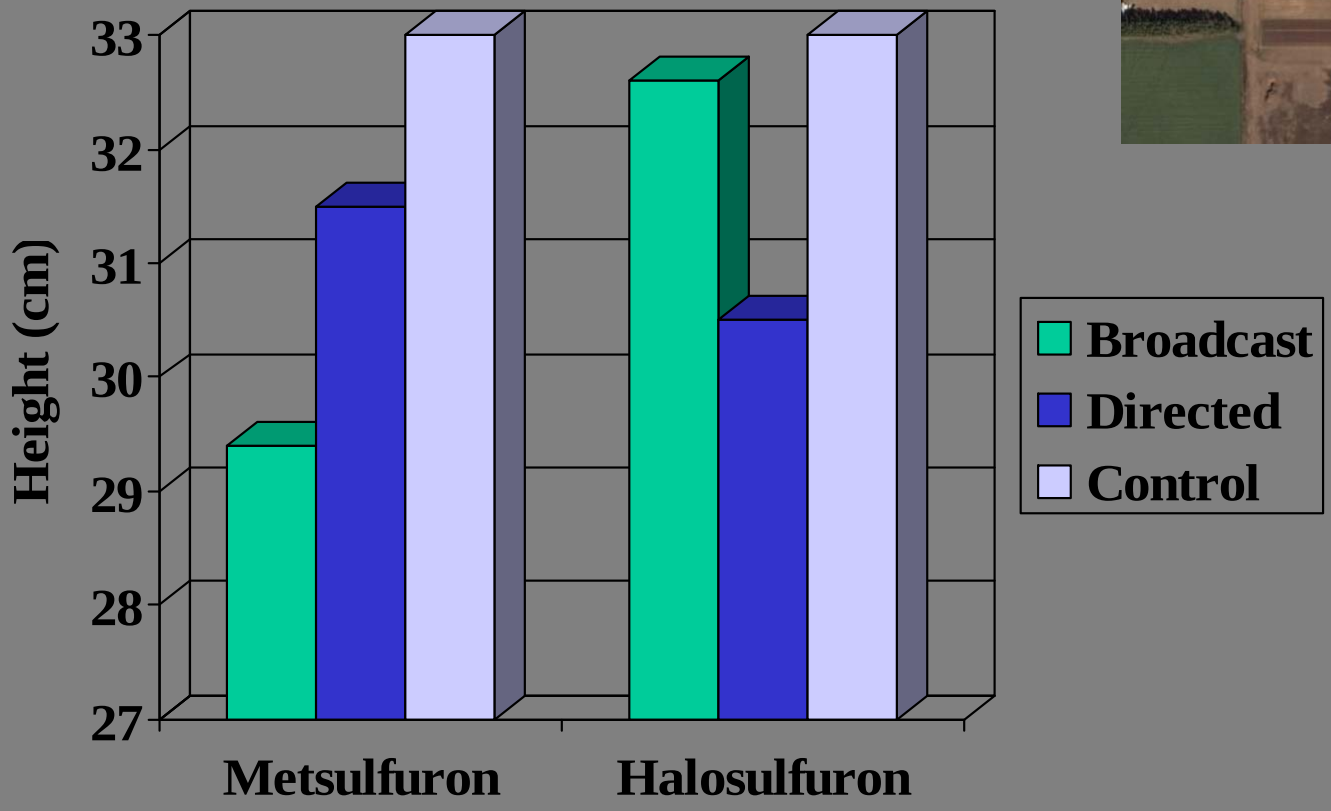
- Elberta 2004
- Shubuta 2004
- Atmore 2004
- Elberta 2005
- Shubuta 2005
- Delano 2005
- Taylor 2006
- Flint River 2006
- Elberta 2007

Results

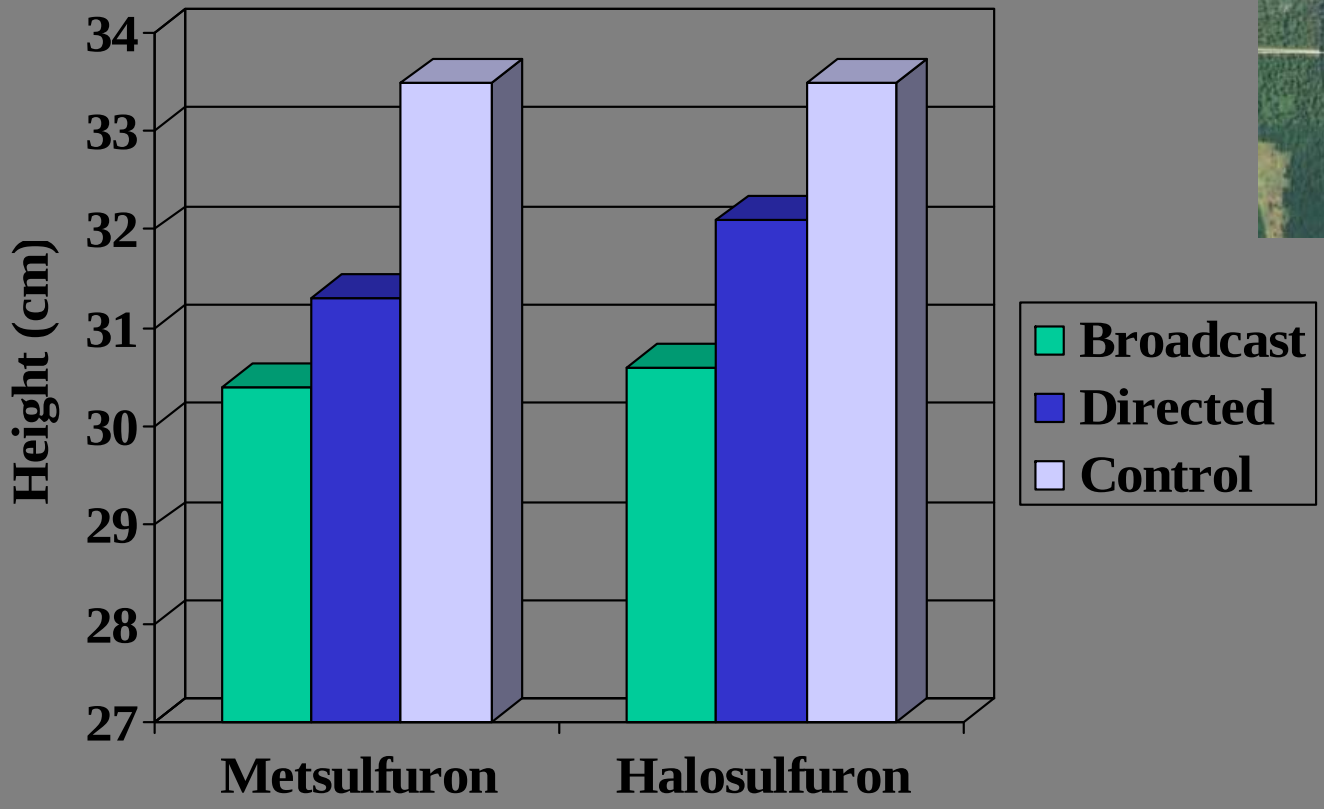
- Elberta 2004 Stunting -height
- Shubuta 2004 No stunting
- Atmore 2004 Lifted early
- Elberta 2005 Stunting -height
- Shubuta 2005 No stunting
- Delano 2005 Better than untreated hardwoods
- Flint River 2006 Stunting – height- RCD
- Taylor 2006 No stunting

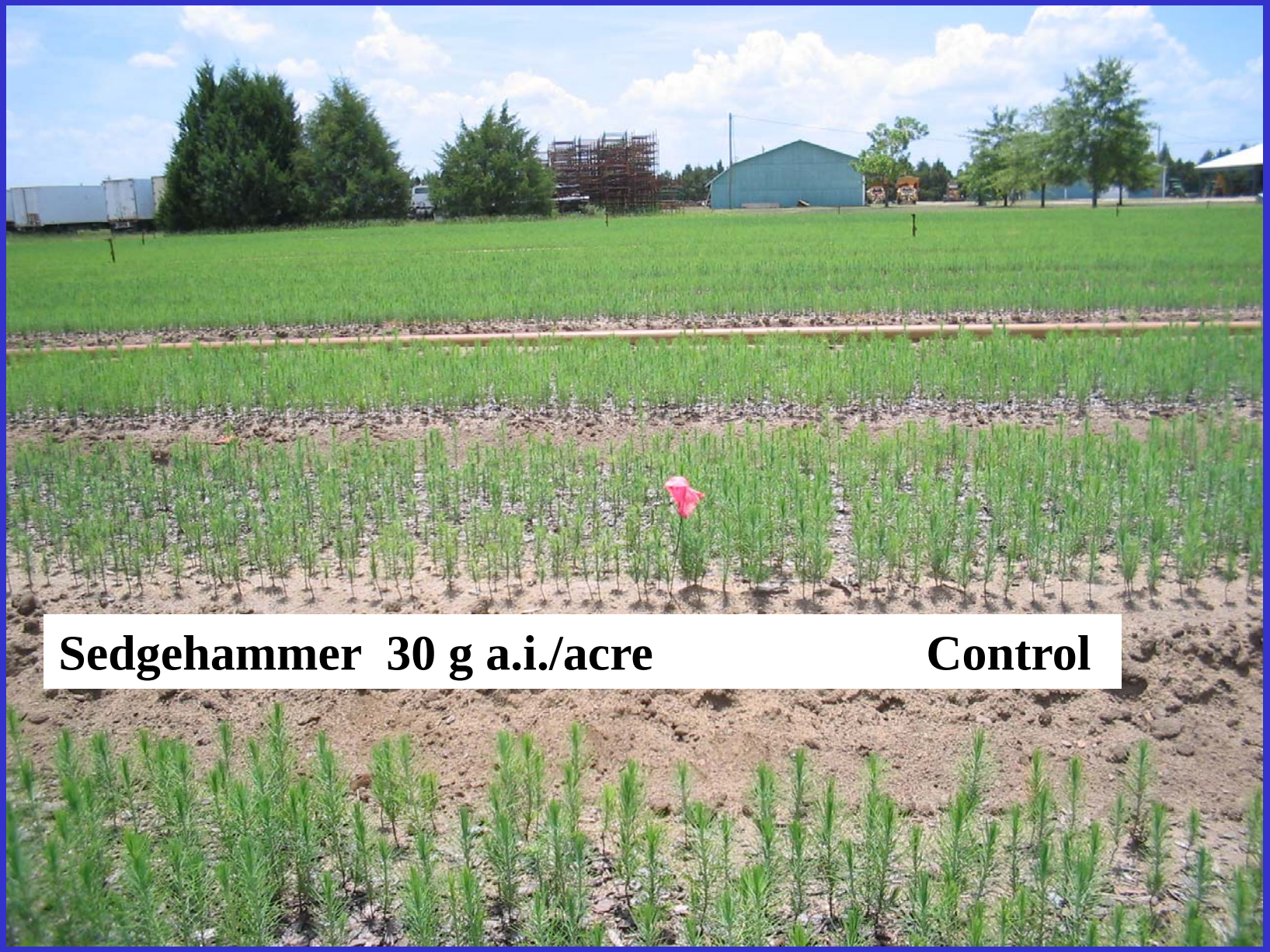
2004


Comstock Rd


Height (cm)
33
32
31
30
29
28
27
Metsulfuron
Halosulfuron
Broadcast
Directed
Control

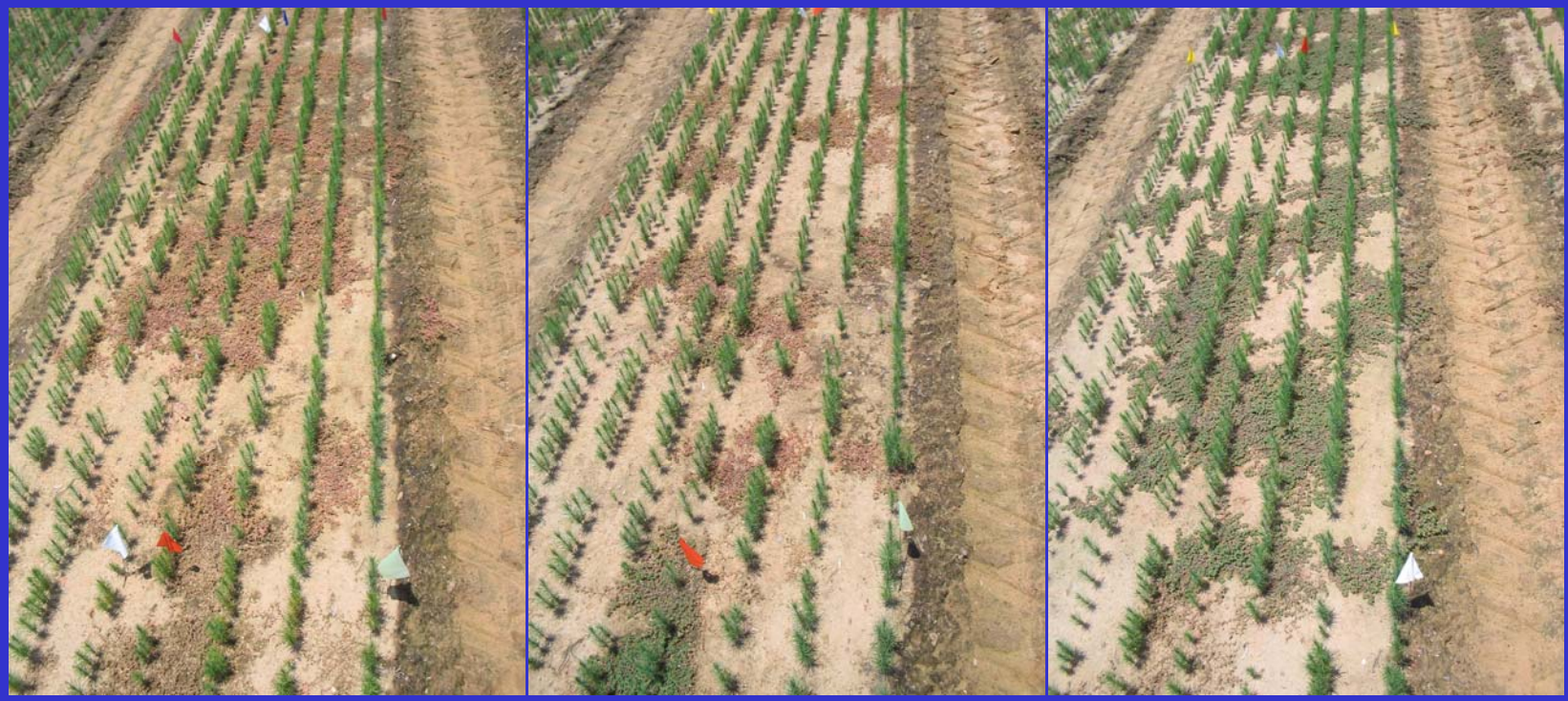
2006


Height (cm)
34
33
32
31
30
29
28
27
Metsulfuron
Halosulfuron
Broadcast
Directed
Control


Sedgehammer 30 g a.i./acre
Control

Metsulfuron (5.1 g ai/acre)
photo taken about 92 hours after application

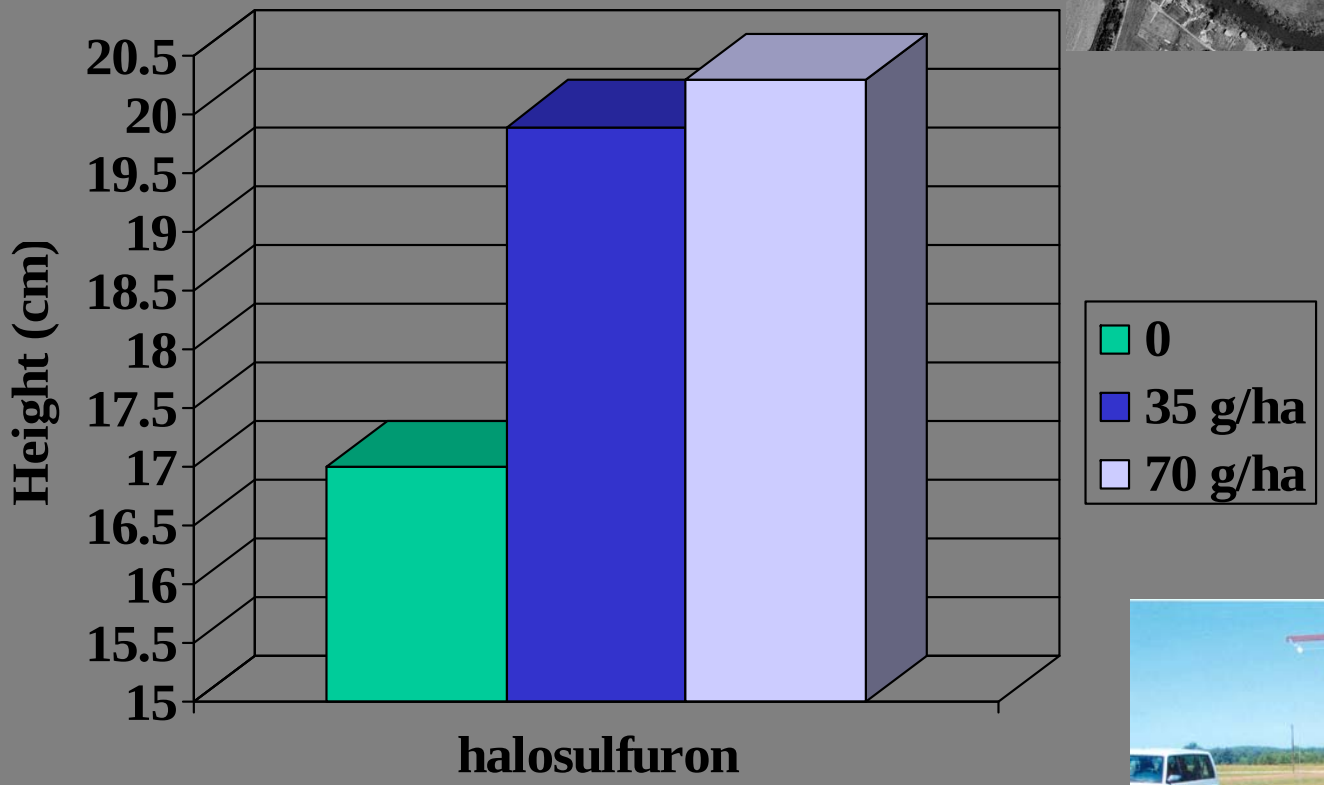
broadcast directed control



ESCORT® XP may be applied on conifer and hardwood plantations, and noncrop sites that contain areas of temporary surface water caused by the collection of water between planting beds, **in equipment ruts**, or in other depressions created by management activities

Equipment rut

2005 – ww oak


Height (cm)
20.5
20
19.5
19
18.5
18
17.5
17
16.5
16
15.5
15
halosulfuron
0
35 g/ha
70 g/ha

Conclusions

On some soils, halosulfuron-methyl (1.4 oz product/acre) will stunt seedlings even when using a directed sprayer.

On some soils, using a directed applicator can increase seedling tolerance to metsulfuron-methyl (8.5 g product/acre or 1.5x rate).

Operational rate is 3 to 6 g product/acre.

Questions?

MSMA

32 oz/acre

16 oz/acre

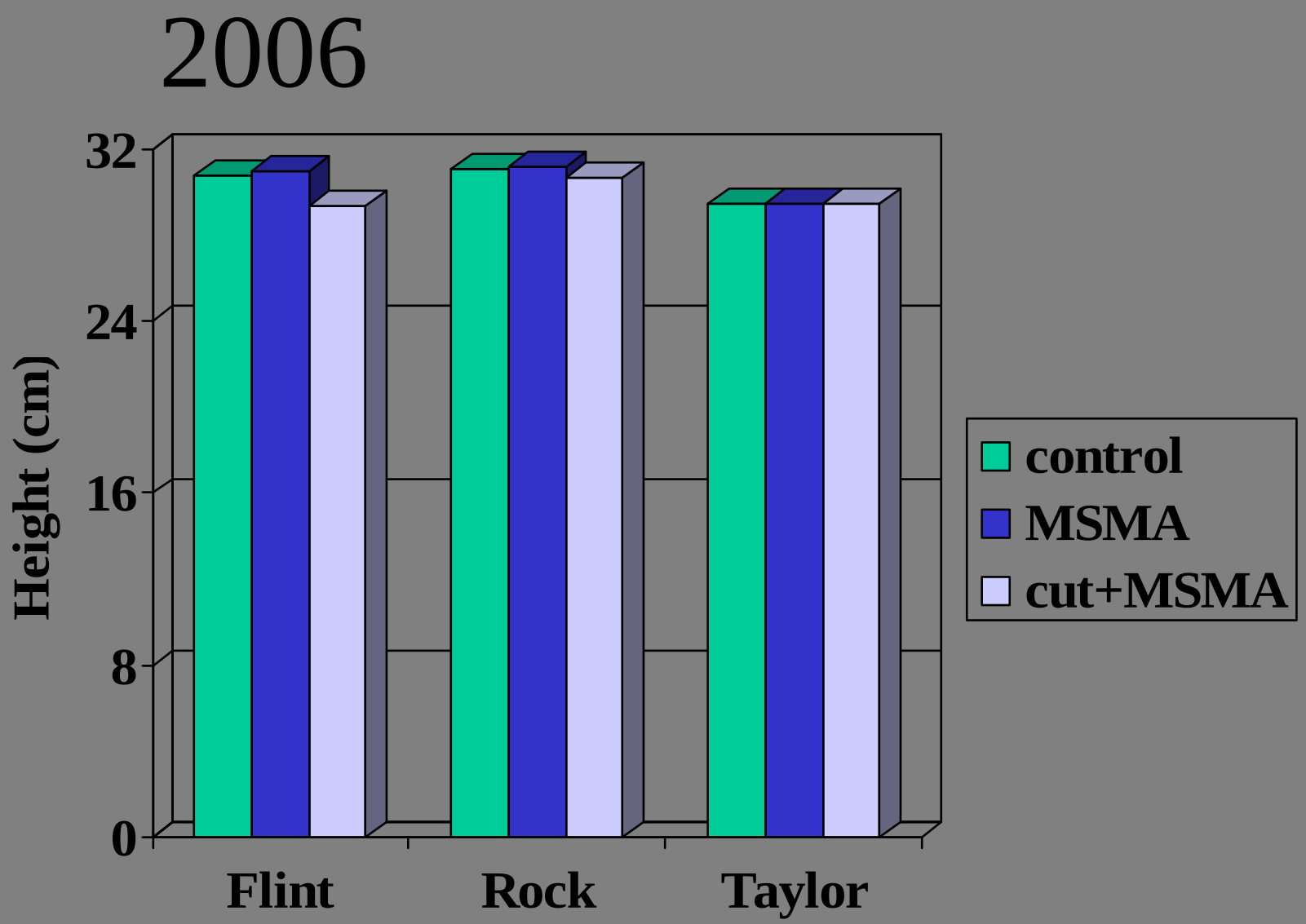
8 oz/acre

MSMA Trials

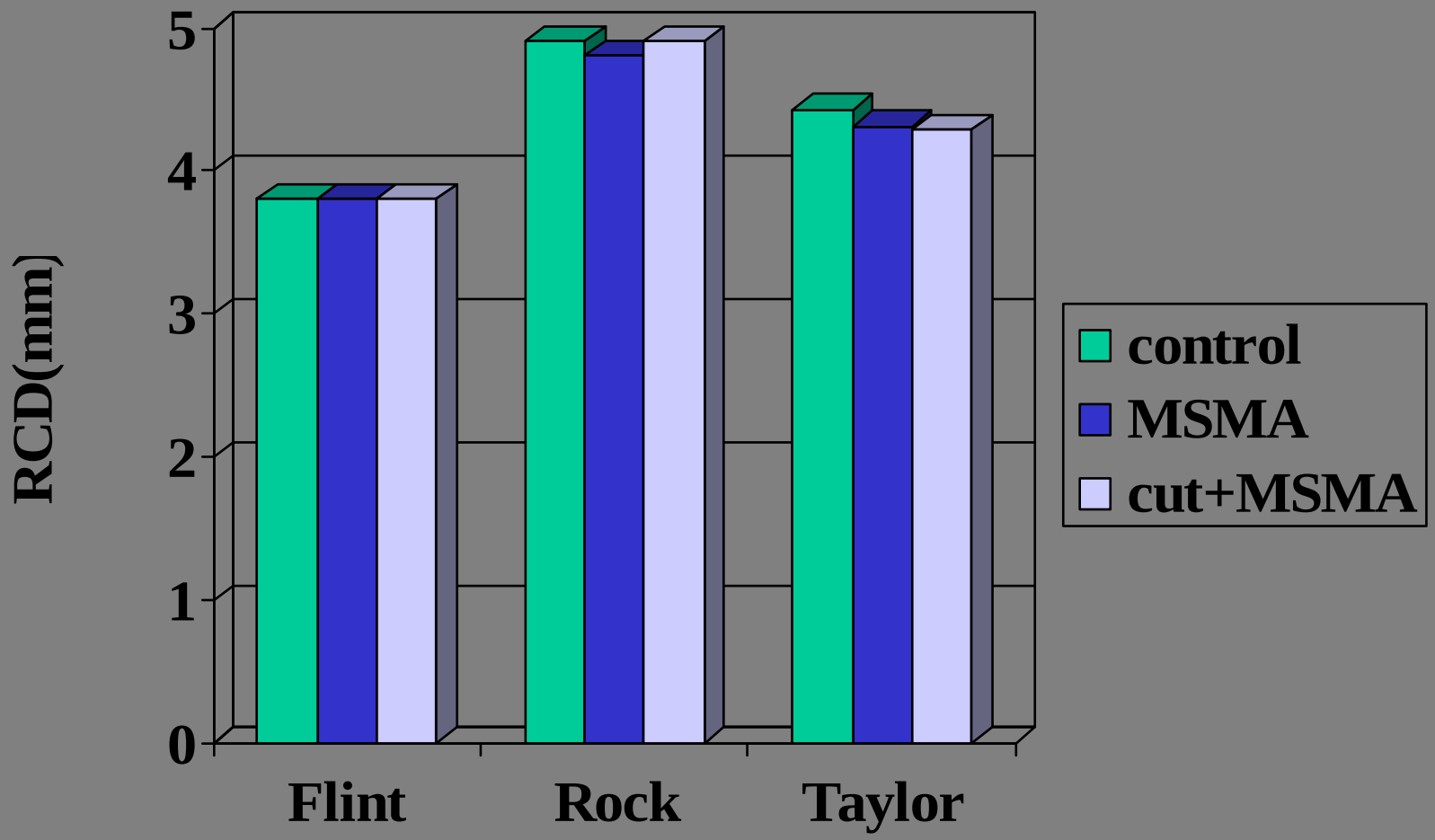
- Taylor 2006
- Flint River 2006
- Rock Creek 2006
- Camden 2006

MSMA 16 oz product/acre

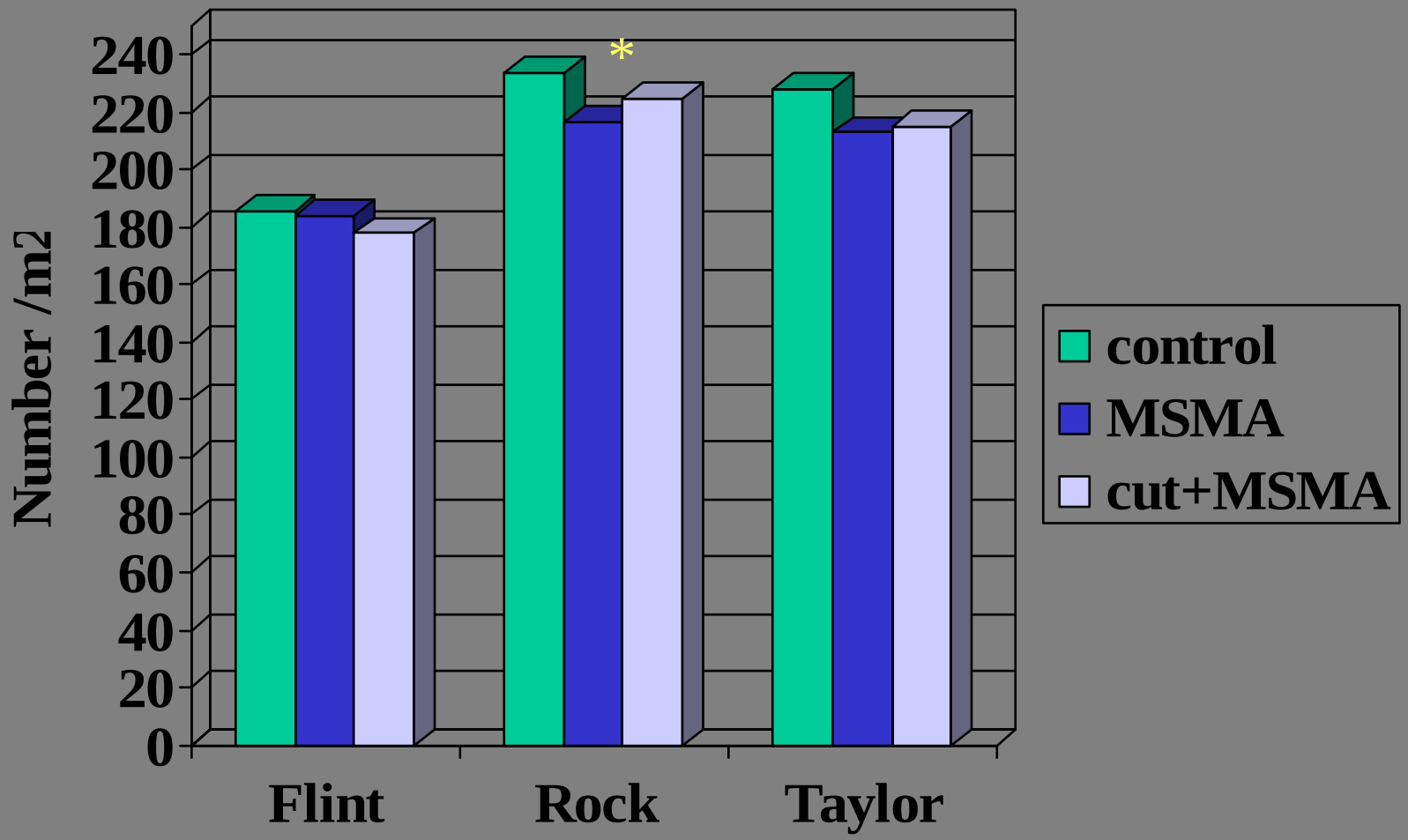
2 lbs a.i./acre of MSMA (with and without cutting)


2006
Height (cm)
32
24
16
8
0
Flint
Rock
Taylor
control
MSMA
cut+MSMA

2006



2006


Number /m2
240
220
200
180
160
140
120
100
80
60
40
20
0
*
Flint
Rock
Taylor
control
MSMA
cut+MSMA

Dated: August 2, 2006.

Debra Edwards,

Director, Special Review and Reregistration Division, Office of Pesticide Programs.

[FR Doc. E6–12896 Filed 8–8–06; 8:45 am]

BILLING CODE 6560–50–S

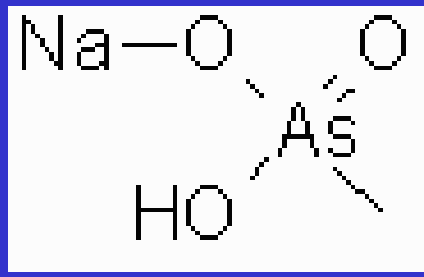
ENVIRONMENTAL PROTECTION AGENCY

[EPA–HQ–OPP–2006–0201; FRL–8085–9]

Organic Arsenical Herbicides (MSMA, DSMA, CAMA, and Cacodylic Acid), Reregistration Eligibility Decision; Notice of Availability

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.



document. The Agency has determined that all products containing MSMA, DSMA, CAMA, and cacodylic acid are not eligible for reregistration. The

- These findings indicate that loblolly pine is generally tolerant to MSMA at rates of 1 to 2 lbs a.i./acre. However, the 2 lb a.i./acre rate reduced stocking at one nursery.

- Although greenhouse trials indicate that recently top-pruned seedlings could be injured (South and Hill 2005), nursery trials did not show similar results.

- Research needs to be conducted to determine if applying MSMA in multiple applications will adversely affect seedling growth.

Conclusions

Pines have tolerance to MSMA and this herbicide can selectively control Cyperus compressus in pine seedbeds.

Due to concerns about arsenic, the availability of MSMA for use in non-crop areas will likely be limited.

Questions?

No Agrilock = Goal Injury - 2004

No Agrilock = Goal Injury - 2004

RESEARCH REPORT 05-01

SYNTHETIC BED STABILIZERS COST EFFECTIVELY
INCREASE SEED EFFICIENCY

by

Bill Carey, Scott Enebak, Ken McQuage, Doug Shelburne and Ralph Bower

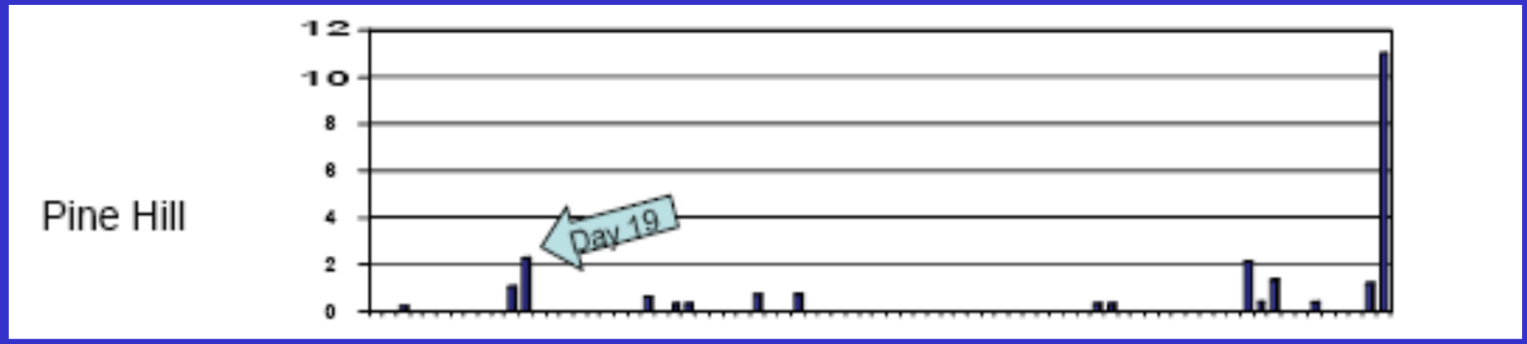
0X

1X

2X

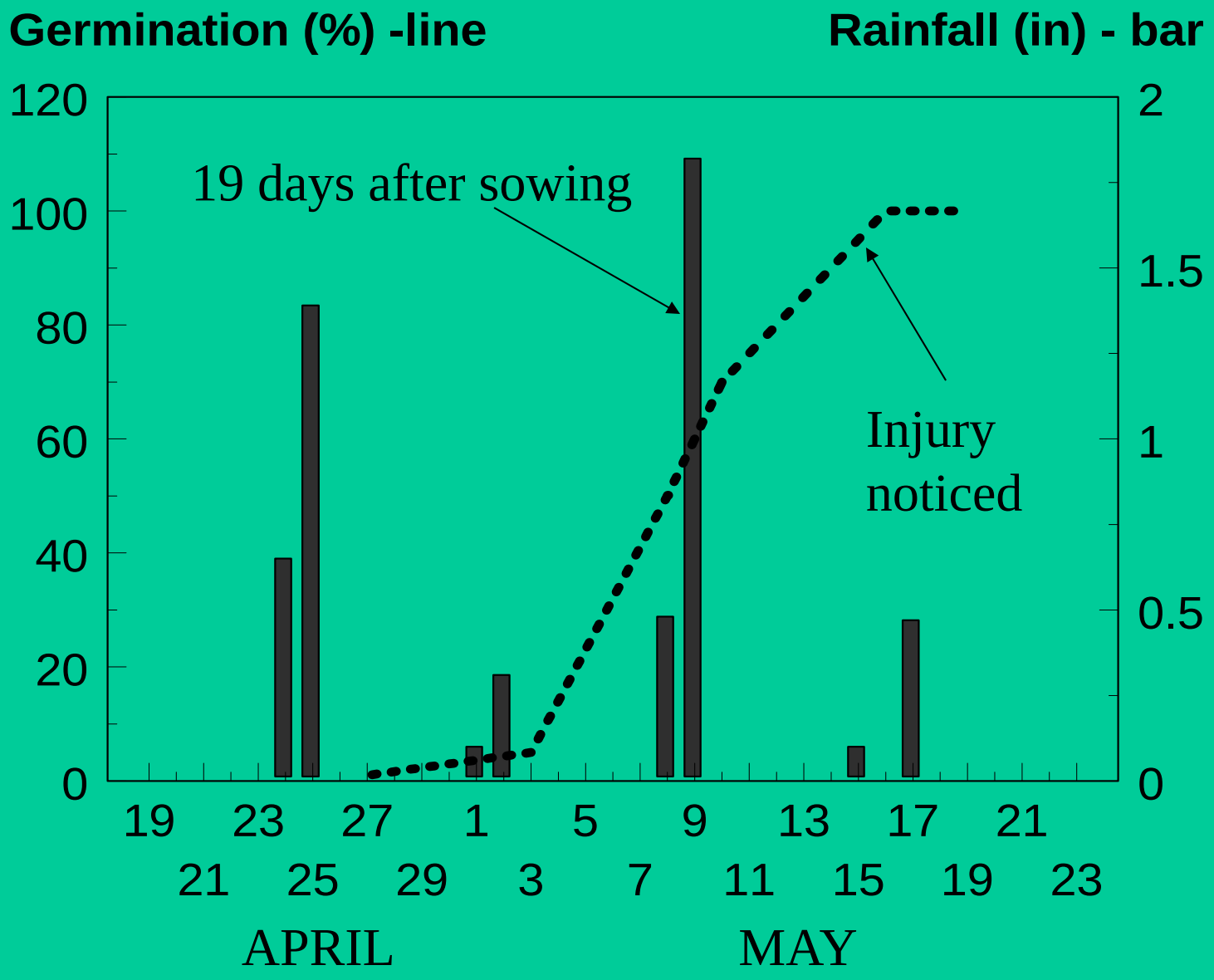
Stabilizer Rate	Weed/ft^2 May	Pines/ft^2 May
0X	0.00 a	18.3 a
1X	0.04 b	31.7 b
2X	0.07 b	34.2 b
lsd	*0.03*	*3.0*

For all five study sites, there were six more seedlings/sq. ft. in stabilizer than in control plots (pr > F < 0.01). However, much of this difference is attributable to herbicide-caused seedling mortality in control plots at Pine Hill. Because herbicide effects were not part of the study plan and because these appear important only on some fine textured soils, plots with herbicide injury were analyzed separately and compared to the number of May weeds per plot in Table 2. The herbicide injury was due to the pre-emergence oxyfluorfen.



2” rain occurred 19 days after sowing

No Agrilock = Goal Injury - 2007


Germination (%) -line
Rainfall (in) - bar
120
100
80
60
40
20
0
2
1.5
1
0.5
0
19 days after sowing
Injury noticed
19 23 27 1 5 9 13 17 21
21 25 29 3 7 11 15 19 23
APRIL
MAY

Conclusions

The use of a soil stabilizer is economically beneficial.

Not only can it increase seed efficiency due to protecting seed from washing, but it also can reduce the risk of herbicide injury.

Trials with pelargonic acid

Dow AgroSciences

Scythe®

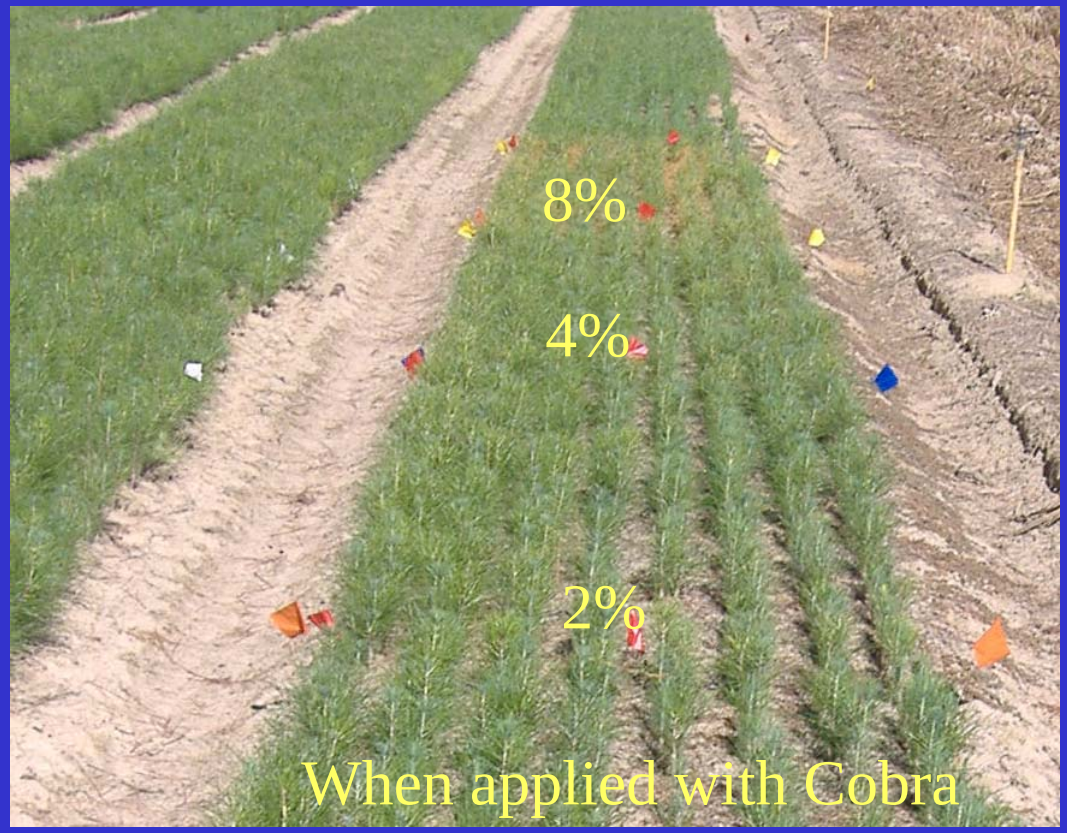
Herbicide

®Trademark of Dow AgroSciences LLC

For control or burndown of a broad spectrum of weeds on contact

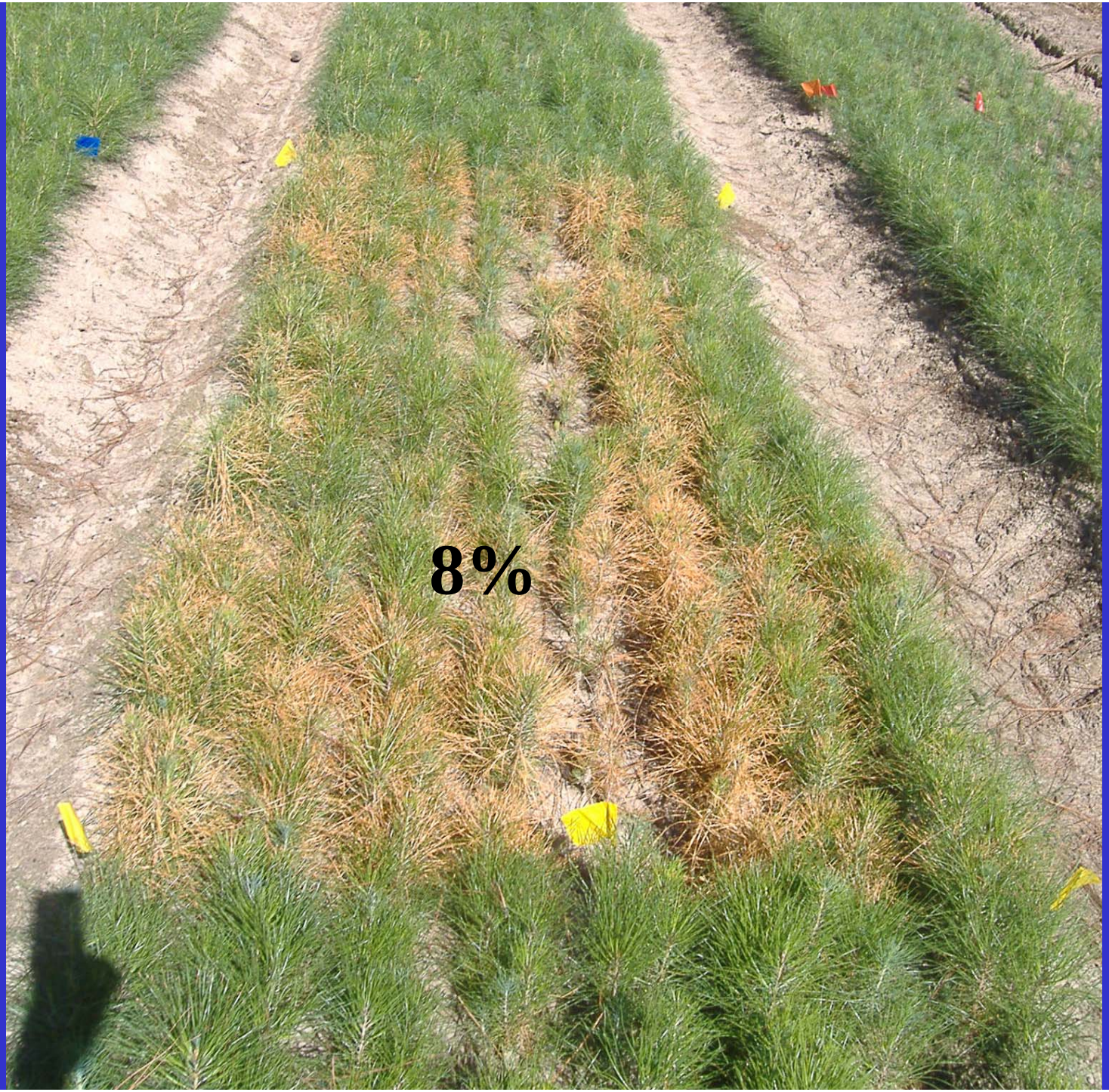
Active Ingredients:	
Pelargonic Acid †	57.0%
Related Fatty Acids (C_6-C_{12})	3.0%
Other Ingredients ††	40.0%
Total	100.0%

† Contains 4.2 pounds of pelargonic acid per U.S. gallon.
†† Contains petroleum distillates.



Visible effects occur within hours. Made of natural fatty acids,

Scythe Herbicide works by removing or “burning” the waxy cuticle of green vegetation.


8%

Scythe Plots taken about 16 hours after application

Scythe Plots taken about 3 hours after application

Scythe Plots taken about 16 hours after application

Scythe Plots taken about 92 hours after application

4%

8%

control

Scythe Plots taken about 92 hours after application

Broadcast

Directed

Trials with pelargonic acid

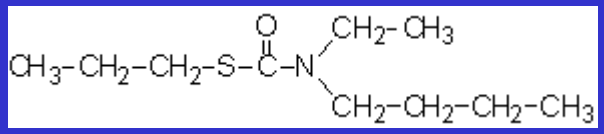
Non-Crop Use Sites and Use Methods

Use Methods: See the corresponding numbers in the "Use Methods" section under "General Information" for use descriptions and precautions.

Non-Crop Group	Non-Crop Use Sites	Use Methods
Turf, Flowers, Bedding and Landscape Plants	Turfgrass (maintenance, sod or seed production), bedding plant, flowers, and ornamentals	1,2,3,4,5,6
Trees and Shrubs	Christmas trees, forest and commercial trees, landscape trees, nursery trees or shrubs, and fiber farms	1,2,5
Greenhouse and Indoor Use	All crops, plants, and structures	1,2,3,7
Non-Crop, Industrial, and Public Areas	Farmstead, homestead, fallow land, storage areas, schools, paved areas, rights-of-way (*e.g.*, road, railroad, utilities), parking lots, recreation areas (*e.g.*, athletic fields, campgrounds, golf courses, playgrounds), walks, industrial sites (*e.g.*, lumberyard, tank farms, buildings).	1,2,7
Structures, Buildings, and Walkways	Bench, deck, equipment, floor, roof, wall, walks, and evaporative cooling pads.	7
Dry Aquatic Sites, Dry Drainage Systems and Around Aquatic Sites	Applications must be made 72 hours prior to reflooding of dry aquatic sites. Dry ditches, dry canals, ditch banks, and for use above the water line or after drawdown of agricultural irrigation water and ditch systems, industrial ponds and disposal systems, and impounded water areas.	1,7

1. **Vegetative Burndown:** General control of weeds for seedbed or site preparation, non-crop and around aquatic sites. Spot treatments may be used in crop and pasture situations.
2. **Directed and Shielded Sprays:** Applications may be made in and around desirable plants when contact of foliage and green bark is avoided.

5. **Sucker Control, Pruning and Trimming:** To burn back unwanted basal sucker growth on woody trees and foliage growth on vines, and excessive cane growth in brambles. Apply only to unwanted vegetative parts. Apply before suckers become woody.



- 3-5% for annual weeds and vegetation
- 5-7% for perennial herbaceous and late stage annuals
- 7-10% for maximum vegetation burndown

1 Gallon = $50

8% = 2 Gallons plus 23 gallons of water = $100/acre
Scythe works better on warm sunny days when the temperature is above 70º F.

Might also control scale insects?

Table 1.

Treatment	amt formulation/100 gal	% mortality of white peach scales	
		7 DAT[a]	28 DAT[b]
Pyriproxyfen	10 fl oz	30.0a	43.3ab
Oil	1 gal	46.7ab	33.3ab
Pyriproxyfen + Oil	10 fl oz +1 gal	51.7ab	43.3ab
Pelargonic acid 1%	1 gal	35.4a	18.4a
Pelargonic acid 3%	3 gal	81.2bc	73.3bc
Pelargonic acid 5%	5 gal	100.0c	100.0c
Untreated check	---	35.0a	23.3a

Means in a column followed by different letters are significantly different by Tukey's multiple comparison procedure ($P \leq 0.05$).
[a, b] Significant by ANOVA; $P = 0.003$, $P < 0.0005$, respectively.

Questions?

Preemergence herbicide toxicity


Atrazine


Oryzalin


Endurance


Reflex


Journey


Oust

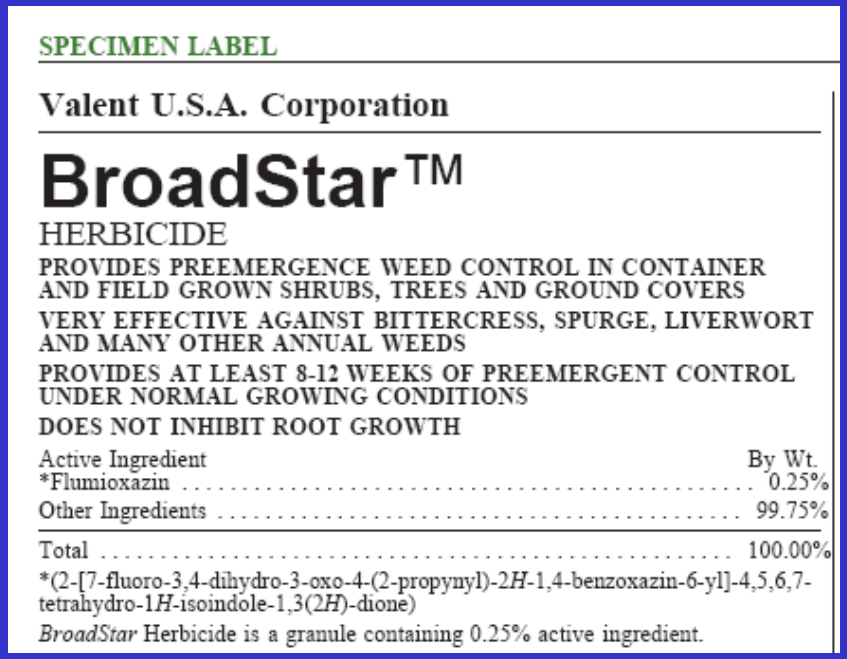
Questions?

Two new herbicides

- flumioxazin
- Prostrate spurge
- National label

- dimethenamid-P

24-C Label in OR and WA



SPECIMEN LABEL

Valent U.S.A. Corporation

BroadStar™

HERBICIDE

PROVIDES PREEMERGENCE WEED CONTROL IN CONTAINER AND FIELD GROWN SHRUBS, TREES AND GROUND COVERS

VERY EFFECTIVE AGAINST BITTERCRESS, SPURGE, LIVERWORT AND MANY OTHER ANNUAL WEEDS

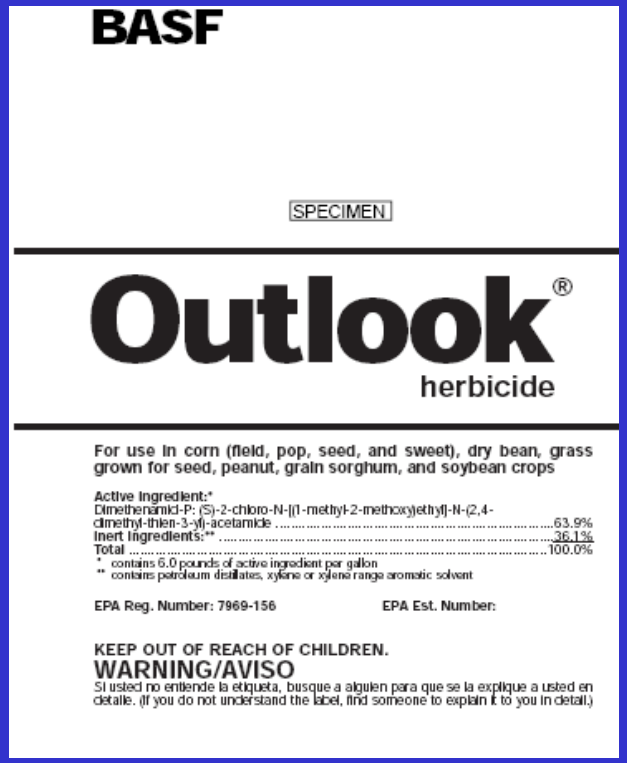
PROVIDES AT LEAST 8-12 WEEKS OF PREEMERGENT CONTROL UNDER NORMAL GROWING CONDITIONS

DOES NOT INHIBIT ROOT GROWTH

Active Ingredient	By Wt.
*Flumioxazin	0.25%
Other Ingredients	99.75%
Total	100.00%

*(2-[7-fluoro-3,4-dihydro-3-oxo-4-(2-propynyl)-2*H*-1,4-benzoxazin-6-yl]-4,5,6,7-tetrahydro-1*H*-isoindole-1,3(2*H*)-dione)

BroadStar Herbicide is a granule containing 0.25% active ingredient.



BASF

SPECIMEN

Outlook®

herbicide

For use in corn (field, pop, seed, and sweet), dry bean, grass grown for seed, peanut, grain sorghum, and soybean crops

Active Ingredient:*

Dimethenamid-P: (S)-2-chloro-N-[(1-methyl-2-methoxy)ethyl]-N-(2,4-dimethyl-thien-3-yl)-acetamide	63.9%
Inert Ingredients:**	36.1%
Total	100.0%

* contains 6.0 pounds of active ingredient per gallon
** contains petroleum distillates, xylene or xylene range aromatic solvent

EPA Reg. Number: 7969-156 EPA Est. Number:

KEEP OUT OF REACH OF CHILDREN.

WARNING/AVISO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

Broadcast Trials

- Elberta 2004
- Shubuta 2004
- Atmore 2004
- Elberta 2005
- Shubuta 2005

Results

- Elberta 2004 Stunting - Broadstar
- Shubuta 2004 Stunting - both
- Atmore 2004 No stunting of oaks
- Elberta 2005 No stunting
- Shubuta 2005 No stunting

Conclusions

Stunting with flumioxazin occurred at one out of four pine trials. No injury was noted on oak seedlings. Further testing in hardwoods.

Stunting with dimethenamid occurred only at one out of four pine trials. However, wording on 24-C labels state “Do not apply to forest tree seedbeds.”