

# *Pest Manager Training*

*Recertification Training for Pesticide Applicators, SAF & ISA*



## **Managing The Top 10 Landscape Weeds**

**June 14, 2018**

**Valdosta, GA**

**Scott Wanzor: GA, AL, MS**  
**Regional Sales Representative**

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# Calibration



1 gallon of water covers how many square feet?

# Calibration: Backpack

- Know your water volume per 1,000 ft<sup>2</sup>
- Always double check rates of pesticide

## Correct Example... (Slide 1 of 2 slides...)

- Label says to apply 3 oz. 1,000 ft<sup>2</sup>:
  - Amount of water you apply per 1,000 ft<sup>2</sup> = 2 gallons
  - 3 gallon backpack sprayer
  - Will cover 1,500 ft<sup>2</sup> (3 gals water divide by 2 gals/1,000 ft<sup>2</sup>)
  - Therefore: Mix 4.5 oz. of herbicide in this backpack (3 oz./1,000 ft<sup>2</sup> x 1,500 ft<sup>2</sup> ...or... 3 x 1.5)

# Calibration: Backpack

**Incorrect example:** (Slide 2 of 2 slides...)

- Label calls for 3 oz./1,000 ft<sup>2</sup>
  - 3 gallon backpack sprayer
  - You mix 3 oz. x 3 gallons of water (3 oz. for each gallon of water)
  - 9 oz. of herbicide
- **Correct amount of herbicide is 4.5 oz. per 3 gallons. 9 oz. is double the rate on the label!**
  - 1) Excellent weed control!
  - 2) Off label use!
  - 3) Paid twice too much \$\$\$!

# Top 10 Georgia Tough Weeds

## Grasses:

1. Poa annua: Annual Bluegrass
2. Dallisgrass
3. Goosegrass
4. Crabgrass

## Broadleaf Weeds:

5. Virginia Buttonweed
6. Chamberbitter
7. Lespedeza
8. Doveweed

## 9. Sedges:

10. Kyllingias:

# Grass Weeds:

# 1. Annual bluegrass - *Poa annua*



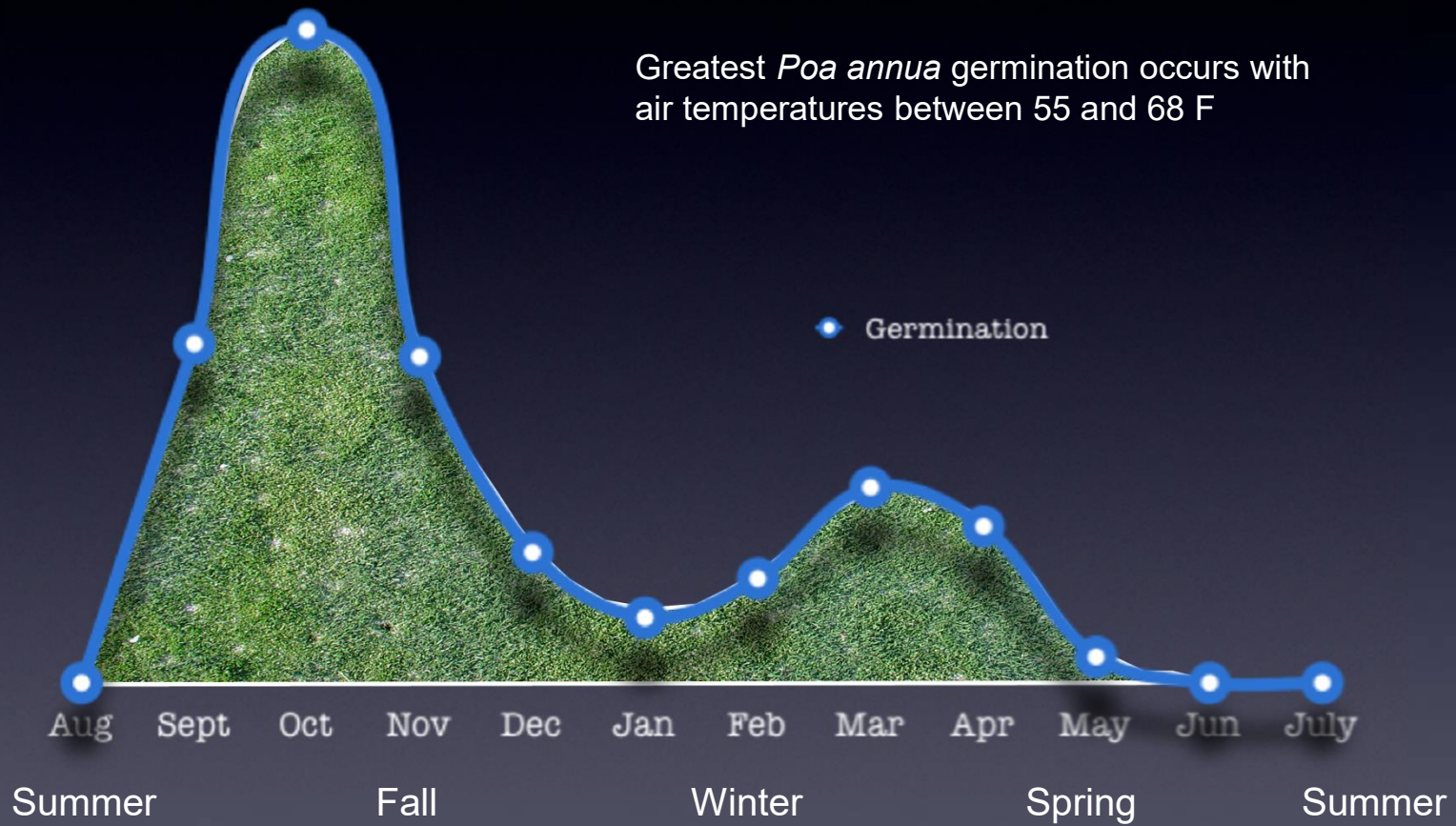


# Annual bluegrass: Biology

- **Germination**
  - Moving Seasonal Window: Mostly in fall
  - Dual-Season Germination
- **Biotypes and Ecotypes**
  - 2 Biotypes: var. annua and var. reptans
  - Limitless number of ecotypes
- **Herbicide resistance**
  - Resistance to many herbicides
  - Future resistance



## Seasonal Pattern of *Poa annua* germination



## Postemergence Herbicides for *Poa annua* Control

| Active ingredient | Herbicide Product | Family              | Mode of Action           |
|-------------------|-------------------|---------------------|--------------------------|
| Glyphosate        | Roundup           | Glycine             | EPSP Inhibitor           |
| Simazine          | Princep           | Triazine            | Photosystem II inhibitor |
| Trifloxysulfuron  | <b>Monument</b>   | Sulfonylurea        | ALS Enzyme Inhibitor     |
| Foramsulfuron     | <b>Revolver</b>   | Sulfonylurea        | ALS Enzyme Inhibitor     |
| Flazasulfuron     | <b>Katana</b>     | Sulfonylurea        | ALS Enzyme Inhibitor     |
| Bispyribac        | Velocity          | Pyrimidinyl benzoic | ALS Enzyme Inhibitor     |

All are for non-overseeded use, except Velocity.

# 2. Dallisgrass



# Dallisgrass: Biology

- **No single herbicide available will eradicate dallisgrass**
- Not even 2 or 3 applications consistently
- Usually a multi-year process
- The loss of MSMA has most negatively effected dallisgrass control



## Dallisgrass: Biology

- Goes dormant later than bermudagrass
- Often in dense stands: Perennial
- In general, it can't take low mowing heights.  
It mainly clumps leading to dense stands



# Key Factors for Post Dallisgrass Control:

## > Fall Applications <



The majority trying to control dallisgrass are making applications at the wrong time of the year: **Spring and summer don't work well**

- Glyphosate
- Ornamec/Fusilade II
- Tribute Total



### 3. Goosegrass (*Eleusine indica*)





## Goosegrass (*Eleusine indica*)

- Summer annual grass
- Later germinating than crabgrass
- More difficult to kill with MSMA than crabgrass
- Resistance is possible
- **SpeedZone just got labeled!**

# SpeedZone:

## Goosegrass Control

**NEW**

### POSTEMERGENCE CONTROL OF GRASSY WEEDS:

Speed Zone will control or suppress specific annual grasses when applied at a rate of 4-5 pints/acre. Depending on timing of application, a second application may be needed for adequate control. If necessary, a second application may be made at the same rate, 30 days after the initial application. Speed Zone works best when applied while the annual grasses are small (pre-tiller) and actively growing, but control can be obtained at all growth stages. Some biotypes may show resistance to PPO inhibiting herbicides.

#### Common Name

Goosegrass\*

#### Scientific Name

Eleusine indica

\*Not for use in California



**State registration are  
now updated**

**Began appearing on  
labels in August 2015**

**All package sizes will  
contain new language  
by late fall 2015**

**1.5 oz/1,000 ft<sup>2</sup> twice**

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# SpeedZone Goosegrass Control: 1.5 oz/gallon



# SpeedZone Goosegrass Control

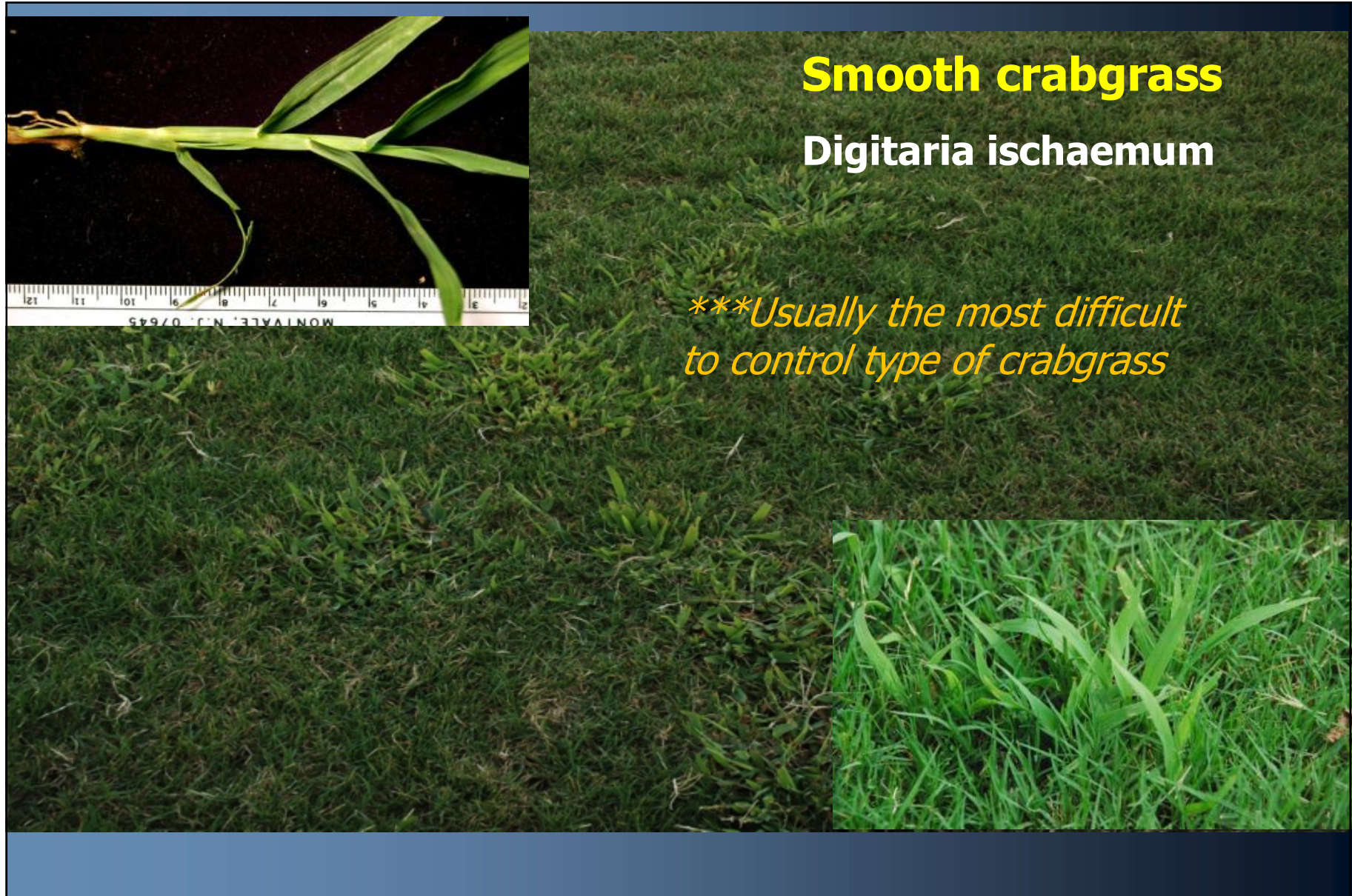


- SpeedZone 1.5 oz/gal
- Applications made:
  - 8/16/15
  - 9/20/15
- Heavily shaded area



## 4. Crabgrasses

- Smooth
- Large
- Southern
- Blanket





## Large crabgrass

*Digitaria sanguinalis*



## Southern crabgrass

*Digitaria ciliaris*







**Blanket crabgrass**

*Digitaria serotina*



## Herbicide Options for Crabgrasses

|                   | <b>Large</b> | <b>Southern</b> | <b>Smooth</b> | <b>India</b> | <b>Blanket</b> |
|-------------------|--------------|-----------------|---------------|--------------|----------------|
| Life Cycle        | Annual       | Annual          | Annual        | Annual       | Perennial      |
| Barricade         | E            | E               | E             | E            | E*             |
| Pendulum          | E            | E               | E             | E            | E*             |
| Dimension#        | G            | G               | E             | G            | G*             |
| Ronstar           | E            | E               | E             | E            | E*             |
| <b>Quinclorac</b> | <b>G</b>     | <b>G</b>        | <b>G</b>      | <b>G</b>     | <b>F-G</b>     |
| MSMA              | E            | E               | E             | E            | E              |
| Acclaim           | G            | G               | E             | G            | G              |
| Fusilade II       | G            | G               | E             | E            | G              |
| Segment           | E            | E               | E             | G            | G              |

\* Pre-herbicides will only control seedlings, not perennial plants.

# Dimension is the only pre-herbicide with post-crabgrass control.

\*\* All post herbicides work better when applied as sequential applications.

# Broadleaf Weeds:



## 5. Virginia buttonweed

- **Difficult to control.** Try digging if there are only a few plants.
- Repeat applications of 3 or 4-ways about 6 weeks apart are needed for adequate suppression. No herbicide works one app.
- **Very odd botanically:** Produces underground flowers(!) and seeds, no leaf petiole, prefers moist or wet areas

## Virginia Buttonweed:

- Germinates and grows beginning late spring
- No preemerge herbicides are effective
- Can tolerate mowing height of 1/2 inch
- Produces a taproot
- Perennial
- Readily roots at nodes
- Can and will form dense mats
- Seed capsules float and move with rainwater
- Fragments of stem will produce new plants

# Virginia Buttonweed: Duluth, GA

**Celsius:** 3.2 g / 1,000 ft<sup>2</sup>

**Speedzone So.:** 1.5 oz / 1,000 ft<sup>2</sup>

**Surge:** 1.2 oz / 1,000 ft<sup>2</sup>

~~~~~

<<<<< 8/5/13: Apply >>>>>



<<<<<<<<< 7 DAT >>>>>>>>>



<<<<<<<<< 10 DAT >>>>>>>>>





## 6. Chamberbitter

- Germinates in early summer: One of last weeds to appear (June-July)
- Loves hot weather
- Looks like Mimosa: Look for little seed pods on midrib, underside of leaf
- Katana Herbicide applied at 1.5 oz/acre works very well.
- SpeedZone Southern and Surge work well. Reapply again in 30 days.



- Very difficult in hot, dry summer conditions
- Seems to be getting harder to control
- Woody / wirey
- **SpeedZone Southern + MSM works very well**

## 7. Lespedeza



## 8. Doveweed

*Murdannia nudiflora*



- **Doveweed**

*Murdannia nudiflora*

- Life cycle: Annual
- Germ: Late May or June
- Flowering: Mid-late summer
- Dies very quickly when temperatures drop below 55



Surge works very well!

- Inexpensive
- Safe to centipede, zoysia, Bermuda turf
- Very effective on many tough broadleaf weeds



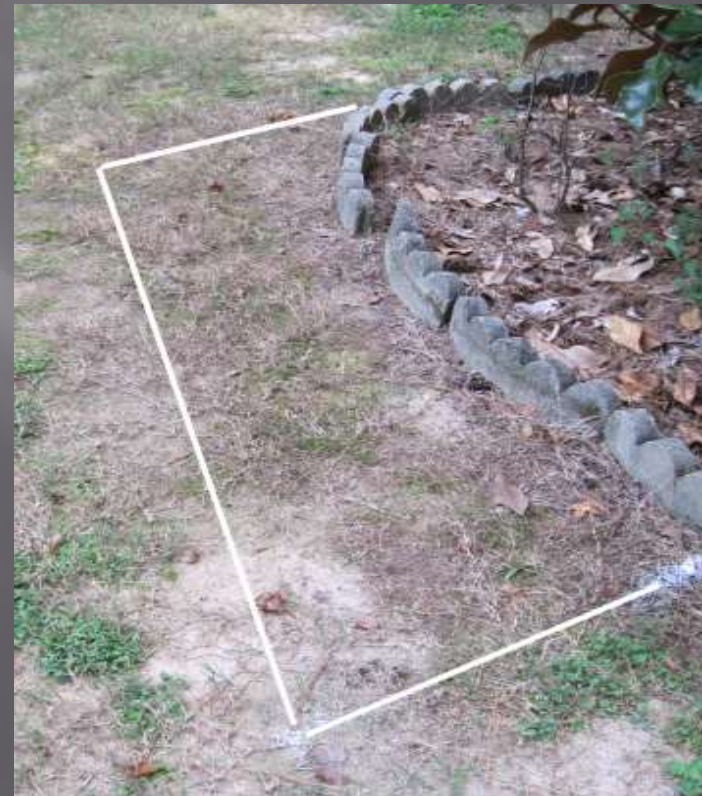
- **Up to 2X faster than other amine products**
- **Economical – low cost water-based formulation**
- **Fast visual response**
- **Suitable for application up to 90° F**
- **Foliar absorbed**
- **Reduces call backs**
- **Difficult to control weeds including:**
  - **Doveweed control**
  - **Chamberbitter**
  - **Virginia buttonweed**

**Surge 1.2 oz./1,000 ft<sup>2</sup> : Doveweed**  
**Augusta, GA**

8/29/13



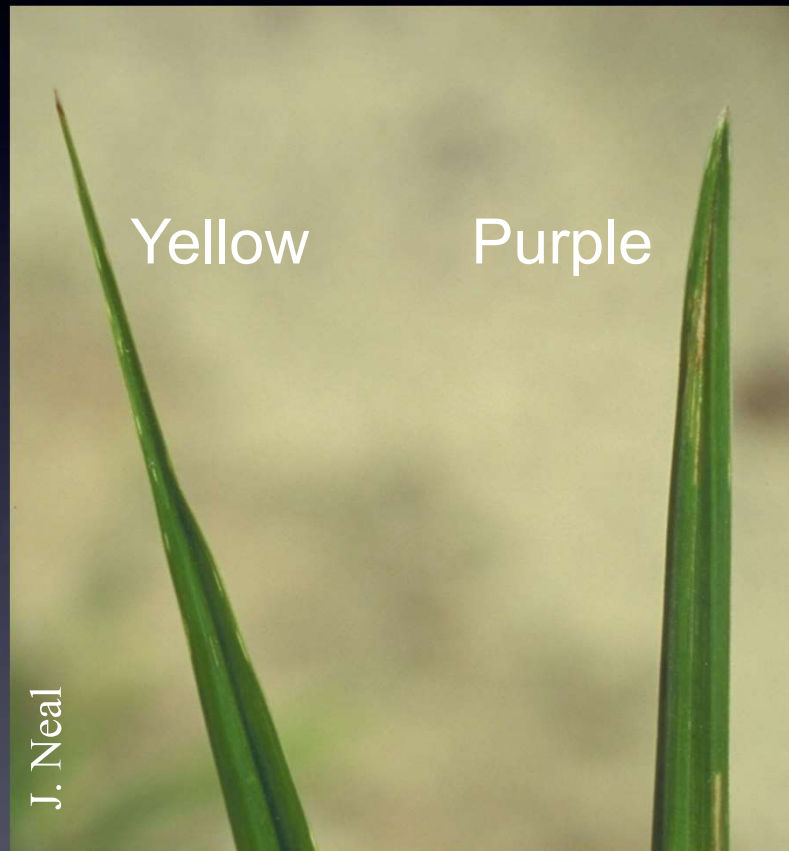
9/30/13: 32 DAT



9. **Sedges**  
10. **Kyllingas**

# Yellow vs. Purple Nutsedge: Leaf tips

Yellow  
nutsedge  
leaf tips  
taper to a  
long,  
narrow  
point



Purple  
nutsedge  
leaf tips  
are  
pointed  
but not  
tapered

# Yellow vs. Purple: Flowers



Purple or reddish brown turning black



Yellow fading to tan

# Non-tuberous sedges:

Non “nut sedge” sedges

**Annual (or annual flat) sedge**

*Cyperus compressus*

**Cylindric sedge**

*Cyperus retrorus*

**Globe sedge**

*Cyperus globulosus*



**Annual flat sedge**



**Annual flat sedge**



**Globe sedge**



**Cyllindric sedge**



# Perennial *Kyllinga* species

## Green kyllinga

*Kyllinga brevifolia*

## False-green kyllinga

*Kyllinga gracillima*

## Cock's comb kyllinga

*Kyllinga squamulata*

**Green kyllinga**





False-green kyllinga

**False-green kyllinga**







**Fragrant kyllinga**



### Flazasulfuron (Katana):

Sites: Golf courses, athletic fields, sod farms, **residential**, commercial.

Weeds: sedges, many broadleaves and cool-season grasses: Poa annua, fescue, ryegrass

Turf: Warm-season grasses: Zoysia, bermuda, centipede, seashore paspalum

Rate: 0.5 to 3.0 oz/a

Note: Mix with non-ionic surfactant for maximum effectiveness.

Annual sedge (2 left photos), Yellow nutsedge (right)



Left: Fragrant kyllinga  
Center: Green kyllinga  
Right: Annual sedge



# Broadleaf weed control...

**NEW**



- **FAST!**
- Labeled for use on **Floritam St. Augustine** (Centipede, Bermuda, Zoysia, Seashore Paspalum: All major cool & warm-season turfgrasses)
- **Warm-weather:**  
No phyto / turf damage when used as directed!

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# Avenue South: *NEW*



- **What is it?**
  - The fastest post-emerge herbicide that effectively controls broadleaf weeds in warm-season turfgrass in warm weather
- **Where can it be used?**
  - Warm-season turfgrass including Floratam St. Augustine, centipede and Bermuda grasses
- **3 Modes of action:** Exceptional herbicide resistance management option

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# Avenue South – The Label



## ACTIVE INGREDIENTS:

|                                   |               |
|-----------------------------------|---------------|
| Penoxsulam .....                  | 0.70%         |
| Sulfentrazone .....               | 0.70%         |
| 2,4-D, dimethylamine salt .....   | 7.28%         |
| Dicamba, dimethylamine salt ..... | 2.06%         |
| <b>OTHER INGREDIENTS:</b> .....   | <b>89.26%</b> |

## THIS PRODUCT CONTAINS:

|                                                                          |                      |
|--------------------------------------------------------------------------|----------------------|
| 0.061 lb. Penoxsulam per gallon or 0.70%                                 |                      |
| 0.061 lb. Sulfentrazone per gallon or 0.70%                              |                      |
| 0.530 lb. 2,4-dichlorophenoxyacetic acid equivalent per gallon or 6.05%. |                      |
| 0.150 lb. 3,6-dichloro-o-anisic acid equivalent per gallon or 1.71%.     |                      |
|                                                                          | <b>TOTAL 100.00%</b> |

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# Avenue South - Comparison

## Turf Species:

- Avenue South *NEW*
  - St. Augustine Grass
    - > Floratam St. Augustine
    - > Bitter Blue St. Augustine
  - Bermudagrass
  - Centipedegrass
  - Zoysiagrass
  - Buffalograss
  - Seashore paspalum
  - Cool-season turfgrasses
- Celsius
  - St. Augustine
    - > Floratam St. Augustine
    - > Bitter Blue St. Augustine
  - Bermudagrass
  - Centipedegrass
  - Zoysiagrass
  - Buffalograss





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*Thank you!*