

UF UNIVERSITY OF FLORIDA

# Weed Wiper Basics

Brent A. Sellers and Jose Dias

UF IFAS Extension  
UNIVERSITY OF FLORIDA

---

---

---

---

---

---



---

---

## History

UF UNIVERSITY OF FLORIDA

- Glyphosate – 1970s
  - Non-crop use
  - Spot-treatment
- Rope wicks – late 1970s
  - Not used much after introduction of RR crops
  - Made a slight comeback with herbicide resistance issues and potential use for pastures
  - Several improvements



---

---

---

---

---

---

---

---

## Wiping Broomsedge

UF UNIVERSITY OF FLORIDA



---

---

---

---

---

---

---

---

### Wiping Broomsedge – 2 years



---

---

---

---

---

---

---

---

### Wiping Smutgrass



---

---

---

---

---

---

---

---

### Weed Wiper Research



- A little done in Mississippi
- Mowing prior to broadcast applications not warranted (hexazinone)
- Will mowing help when using a wiper (to get rid of dead plant material and increase uptake)?

---

---

---

---

---

---

---

---

## Materials and Methods



- Four separate experiments were conducted

| Location             | Year | Soil pH | Soil OM | GS initial cover |
|----------------------|------|---------|---------|------------------|
| Myakka               | 2017 | 7.0     | 3.5     | ≈ 70%            |
| Buck Island (site 1) | 2017 | 4.5     | 1.5     | ≈ 60%            |
| Buck Island (site 2) | 2018 | 4.5     | 1.5     | ≈ 70%            |
| RCREC                | 2018 | 5.5     | 2.2     | ≥ 90%            |

---

---

---

---

---

---

---

---

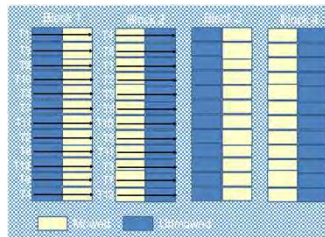
---

---

## 2) CHAPTER 3 - Materials & Methods



- Established in a randomized strip-plot design, 4 reps
- Mowing was the main effect (21 d prior, ≈ 15.0 cm)
- Wiping treatment was randomized as the vertical factor




---

---

---

---

---

---

---

---

---

---

## Materials & Methods



| N   | Wiping method   | Herbicide treatment | Wiping treatments    |
|-----|-----------------|---------------------|----------------------|
| T1  | Uni-directional | Glyphosate at 17.5% | UNI-glyphosate-17.5% |
| T2  | Uni-directional | Glyphosate at 35%   | UNI-glyphosate-35%   |
| T3  | Uni-directional | Glyphosate at 70%   | UNI-glyphosate-70%   |
| T4  | Uni-directional | Hexazinone at 15%   | UNI-hexazinone-15%   |
| T5  | Uni-directional | Hexazinone at 30%   | UNI-hexazinone-30%   |
| T6  | Uni-directional | Hexazinone at 60%   | UNI-hexazinone-60%   |
| T7  | Bi-directional  | Glyphosate at 17.5% | UNI-hexazinone-15%   |
| T8  | Bi-directional  | Glyphosate at 35%   | BI-glyphosate-17.5%  |
| T9  | Bi-directional  | Glyphosate at 70%   | BI-glyphosate-35%    |
| T10 | Bi-directional  | Hexazinone at 15%   | BI-glyphosate-70%    |
| T11 | Bi-directional  | Hexazinone at 30%   | BI-hexazinone-15%    |
| T12 | Bi-directional  | Hexazinone at 60%   | BI-hexazinone-30%    |

---

---

---

---

---

---

---

---


---

---

**Materials & Methods**

**Response variable:**

- Plant mortality at 35 and 90 DAT
- Temporary diagonal line transects crossing each plot
- Difference between pre- and post- treatment plants touching the line




---

---

---

---

---

---

---

---

**2) CHAPTER 3 - Results for GS mortality at 90 DAT**

- There was a Location x Mowing x Wiping ( $P < 0.05$ )
- Myakka: Mowing x Wiping ( $P < 0.01$ )
- Buck Island (site 1): Mowing x Wiping ( $P < 0.05$ )
- Buck Island (site 2): Mowing x Wiping ( $P < 0.05$ )
- RCREC: Mowing x Wiping ( $P < 0.05$ )

---

---

---

---

---

---

---

---

**Summary of Mowing effects within Wiping treatments at each location for GS mortality at 90 DAT**

| Mowing treatment   | Locations       |                 |                 |                 |
|--|-----------------|-----------------|-----------------|-----------------|
|  | Myakka          | Buck Island (1) | Buck Island (2) | RCREC           |
| ... GS mortality range across wiping treatments 90 DAT (%) ... |                 |                 |                 |                 |
| Un-mowed   | 18-95%          | 25-95%          | 34-98%          | 11-79%          |
|  | 1.6 to 6.4-fold | 1.1 to 7.0-fold | 1.1 to 1.3-fold | 1.1 to 2.5-fold |
| Mowed  | 7-56%           | 5-79%           | 29-91%          | 14-70%          |

➤ Overall, most wiping treatments provided greater mortality in unmowed plots, especially the most effective ones.

---

---

---

---

---

---

---

---




---

---

---

---

---

---

---

---

Summary of Wiping treatments effects within Mowing trts at each location for mortality at 90 DAT

| Mowing treatment   | Locations     |                 |                 |               |
|--|---------------|-----------------|-----------------|---------------|
|  | Myakka        | Buck Island (1) | Buck Island (2) | RCREC         |
| GS mortality of the best wiping treatments at 90 DAT (%) |               |                 |                 |               |
| Un-mowed   | BI-Gly-70%    | BI-Gly-35%      | BI-Gly-35%      | BI-Gly-35%    |
|  | BI-Hex-30%    | BI-Gly-70%      | BI-Gly-70%      | BI-Gly-70%    |
|  | BI-Hex-60%    | BI-Hex-60%      | BI-Hex-30%      | BI-Hex-30%    |
|  |               |                 | BI-Hex-60%      | BI-Hex-60%    |
|  | <b>88-95%</b> | <b>80-95%</b>   | <b>85-98%</b>   | <b>69-79%</b> |
| Mowed  | BI-Gly-70%    | BI-Hex-60%      | BI-Gly-35%      | BI-Hex-60%    |
|  | BI-Hex-30%    |                 | BI-Gly-70%      |               |
|  |               |                 | BI-Hex-60%      |               |
|  |               |                 |                 |               |
|  | <b>44-56%</b> | <b>79%</b>      | <b>81-91%</b>   | <b>70%</b>    |

Glyphosate 70%, Hexazinone 30%, Hexazinone 60%.

---

---

---

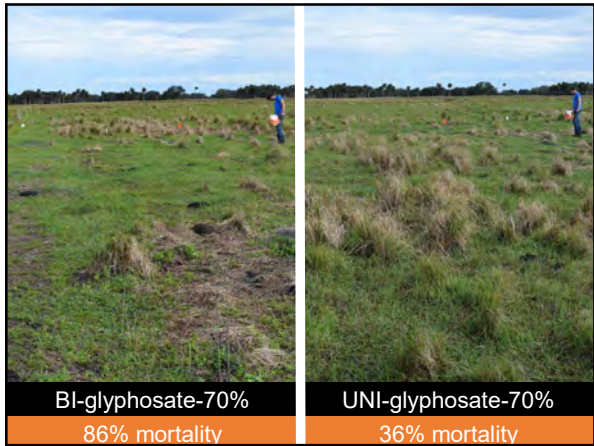
---

---

---

---

---




---

---

---

---

---

---

---

---

**Main Findings and Implications**

UP UNIVERSITY OF FLORIDA

- Mowing prior to herbicide application did not enhance control.
- The best performing wiping treatments were:
  - Bi-directionally wiped glyphosate at 70%
  - Bi-directionally wiped hexazinone at 30%
  - Bi-directionally wiped hexazinone at 60%
- Weed-wipers for GS management appears to be promising
- Myakka and RCREC exhibited lower mortality
- Future research should investigate the effects of additional concentrations, application timings, and weed-wiper height

---

---

---

---

---

---


---

---

**Recommendations**

UP UNIVERSITY OF FLORIDA

- If height differential is not present, hexazinone may be the best product at 30% v/v
- If height differential is significant, glyphosate can be used, but concentration may need to be 35% v/v
- Do not mow prior to using the wiper
- Wipe plants in opposite directions
- There's more 'art' than 'science' to using a wiper



---

---

---

---

---

---

---

---

**Acknowledgements**

UP UNIVERSITY OF FLORIDA

- FCEB – preliminary data
- USDA-NRCS – demonstration plots

---

---

---

---

---

---

---

---