

Florida Weeds: How to Prevent them in the Landscape

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OVERVIEW

- **Why are certain weeds problematic?**
 - How weeds thrive in the environment we create
- **Control methods**
 - Chemical, non-chemical, go-with-the-flow

7 HABITS OF HIGHLY SUCCESSFUL WEEDS

1. They produce copious amounts of seeds



7 HABITS OF HIGHLY SUCCESSFUL WEEDS

2. Their seeds can be spread long distance



7 HABITS OF HIGHLY SUCCESSFUL WEEDS

3. They spread by stolons or rhizomes



7 HABITS OF HIGHLY SUCCESSFUL WEEDS

4. They like the environment we create



7 HABITS OF HIGHLY SUCCESSFUL WEEDS

5. Few or no selective options



7 HABITS OF HIGHLY SUCCESSFUL WEEDS

6. Growth habit makes control difficult



7 HABITS OF HIGHLY SUCCESSFUL WEEDS

7. Resistant or poorly controlled with herbicides



GENERAL WEED CONTROL METHODS

- **Chemical controls**
 - Preemergence, postemergence
 - Includes organic and synthetic pesticides (they are all “pesticides” and “chemicals”)
- **Non-chemical controls**
 - Following BMPs, mulch, flaming, cultivation
- **Designing to “hide” the weeds**

IF YOU ARE GOING TO USE PESTICIDES:

- **Know your active ingredients**
 - “Weed-B-Gone” is not a herbicide
- **Know what those active ingredients do**
 - Quick google searches is all you need
- **Know your turfgrass, especially if St. Augustine**
 - Can you ID different St. Augustine varieties?

KNOW YOUR HERBICIDES:

- Knowing brand (trade) names is worthless
- Know what active ingredients you are using
 - Trade names change, active ingredients can change, formulations and mixtures can change
 - Read the label even if familiar with the product



In the News: Bonus S product recall and refund

The following is an update about the new Scott's Bonus S Weed and Feed. As early as March, Tim Ray, Ron Strahan at LSU, and several other counterparts along the coast had shared their concerns that the metsulfuron containing product was causing injury to centipedegrass. Scott's has officially recalled this product and will now replace it with the old formulation containing atrazine. Official website announcement.



Previous



New

Be cautious with weed and feed products.

by Tim Ray (Harrison Co. Extension Agent).

"In a 2014 newsletter that I send out bi-monthly called "From the Ag Department" I stated reasons to be cautious when using weed and feed products. Unfortunately, there's another reason to be cautious. The "new" formulation of some weed and feed products can cause turf damage depending on either turf type, amount applied, timing of application, or any combination of the three. The former active ingredient in many of these products, Atrazine, is being replaced with Metsulfuron. Metsulfuron has its advantages in that it controls more weeds than the previous formulation, including Dollar Weed, however, we are seeing problems with this new formulation.

I have received several phone calls this year with concerns about how a particular lawn is looking only to find out that a good many of the lawns have a lot of Carpetgrass. While St. Augustine, Centipede, Zoysia, and Bermuda are ok for this new active ingredient, Carpetgrass and Bahia are not so decline or death may occur. Homeowners may not even realize they have Carpetgrass until after they've applied products containing Metsulfuron.

In a recent visit with Dr. Jay McCurdy, Turf Specialist with Mississippi State University Extension Service, Dr.

TURFGRASS MANAGEMENT

Recent Comments

- Kimmie on Weed of the Week: Chamberbitter
- Joseph Justice on In the News: Bonus S product recall and refund
- Robert T Wilharm on In the News: Bonus S product recall and refund
- Gina Rowe on In the News: Bonus S product recall and refund
- Karla Barbee on In the News: Bonus S product recall and refund

Recent Posts

- Forrest County Agricultural High School Students Visits with the Mississippi State University Turfgrass Team
- Turf Clubs Gets Hands On Experience at Gulf Coast Softball Classic
- Invitation to Hospitality Night/Alumni Gathering at GIS
- An Open Invitation to come speak at MSU Turfgrass Seminar
- Field Day 2015 Photo Gallery

Categories

- Baldwin
- Biological Weed Control
- Chemical Weed Control
- Conference Event
- Field Day
- Herbicides
- McCurdy
- MTA

BRUSH CONTROL, VINES, ETC.

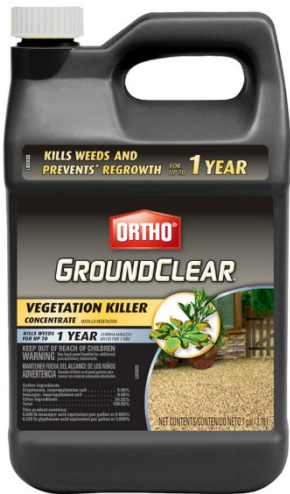
- **Glyphosate**
 - Nonselective
 - Controls most weeds
 - Can be used in landscape beds as a spot application
- **Triclopyr**
 - Effective on broadleaf weeds
 - Often used in combination with glyphosate
 - Not for use in most residential turf
 - Do not apply to planting beds

BROADLEAF CONTROL IN TURF

- 2,4-D combinations (dicamba, carfentrazone, MCPP, MCPA)
- Can damage some St. Augustine varieties
- Typically safe for other turf types
- Quinclorac may be added in some mixtures for crabgrass control
- Atrazine – St. Augustine standard application

GLYPHOSATE COMBINATIONS

- Diquat (contact, nonselective, only speeds up burn)
- Imazapyr (systemic, nonselective, soil sterilant)
- Imazethapyr (systemic, nonselective, soil sterilant)
- Indaziflam (Preemergence herbicide, long-lasting)



Glyphosate Combinations

- **Contains no glyphosate**
 - **Penoxsulam – BL**
 - Dollarweed
 - Betony
 - Clovers
 - **Sulfentrazone - Sedges**
 - **2,4-D - BL**
 - **Dicamba - BL**



CONTACT PRODUCTS

- Ammoniate soap of fatty acids
- Diquat
- Glufosinate (Finale)
- Iron products
- Organic labeled products
 - Citrus, oregano oil, acetic acid, etc.
- Home concoctions (baking soda, soap, vinegar) are contacts – I do not advise on non-registered “pesticides”

OTHER POST HERBICIDES

- Bentazon – yellow nutsedge, some broadleaves, can be used in turf
- Halosulfuron – yellow/purple/other sedges
- Imazaquin – nutsedge, some broadleaves
- Fenoxaprop – graminicide for grasses only
- Fluazifop – graminicide for grasses only
- Sulfentrazone – sedges, some broadleaves – works faster than halosulfuron

COMMON HOMEOWNER PRE HERBICIDES

- Dithiopyr – excellent crabgrass control, controls some other broadleaf species
- Prodiamine – excellent crabgrass control, some broadleaf control
- Oryzalin – Grasses and some broadleaf weeds
- Trifluralin (Treflan/Preen) – very safe, weaker control

COMMON HOMEOWNER PRE HERBICIDES

- Isoxaben – broadleaf weeds only
- Indaziflam – controls broadleaf and grasses – long term control but not available as a sole-use product
- Pendimethalin – crabgrass control and some broadleaf weeds
- Atrazine – PRE control of broadleaves but mostly used as POST

YES!



Will preemergence herbicides work?

NO!



YES!



NO!



YES!



YES!



NO!



YES!



Yes!



CALIBRATION IS KEY!

- Calculate square footage of area you need to treat
- Figure out how much product is needed
- Apply evenly to the area

Example:

- *Lawn is 3,600 sq. ft.*
- *Product states to apply 2 lbs. per 1000 sq. ft.*
- *$2 \times 3.6 = 7.2$ lbs. needed, make several passes to ensure uniformity*

USING HERBICIDES/PESTICIDES

- It is a choice
- Is it worth it?
 - Ex. Doveweed in October
- **Do effective treatments exist?**
 - Ex. Bermuda in St. Augustine
- **Follow the label**
- **Sometimes there are no easy options**
- **“Roundup and Re-sod”**

A FEW NOTES ON GLYPHOSATE...

A FEW NOTES ON GLYPHOSATE

- Highly politicized with great deal of misinformation
- There are advantages and disadvantages
- Get information from reputable resources
- Don't choose an option just because "it's not glyphosate"
- Organic and natural do not mean harmless or safe
- Always go with an integrated approach

PROS AND CONS OF ALTERNATIVES

- Usually cost much more
- Not as effective or are more selective
 - SedgeHammer may be better on sedges, won't control other weeds though
- Many professional products have Warning labels
- Longer soil residual
- Often higher acute toxicity (more PPE)

PROS AND CONS OF ALTERNATIVES

- Coverage much more important
- Multiple applications needed (often not effective on grasses or perennials)

Advantages:

- Some are OMRI certified
- Quick results
- Many are ready-to-use (no mixing but more costly)

NON-CHEMICAL CONTROLS

Primary Organic Landscape Mulch Types



How do they differ?

Mulch Mechanisms of Control

Mulch Mechanisms of Control	
<i>Mechanism of Control</i>	<i>Most effective on:</i>
1. Physical barrier	Seeds below
2. Reduction in light	Seeds below
3. Reducing available water	Seeds above
4. Allelopathy (exuding chemicals)	Seeds below and above but generally not effective

Particle size analysis:

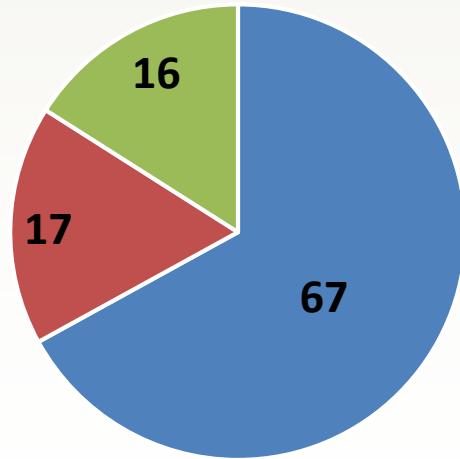
Particle size (in.)	Hardwood (Eucalyptus)	Pinebark Mini-nuggets	Pinestraw
2.0	0%	0%	56%
1.0	2%	16%	2%
0.75	4%	23%	1%
0.5	11%	28%	2%
0.25	39%	27%	4%
0.125	19%	5%	8%
0.0625	9%	1%	12%
<0.0625	17%	0%	13%



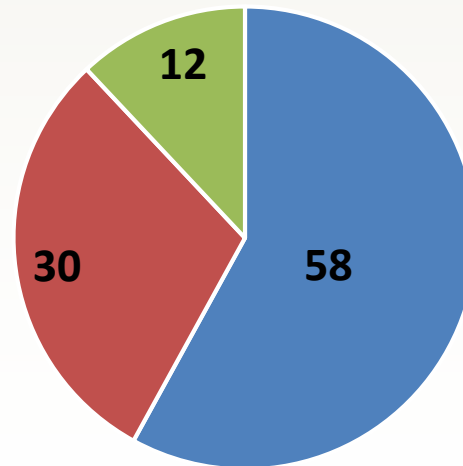
Physical Properties

	Bulk Density (g cm ²)	Surface area of Particles (in ²)
Hardwood	0.09	0.46
Pinebark	0.18	1.50
Pinestraw	0.04	0.44

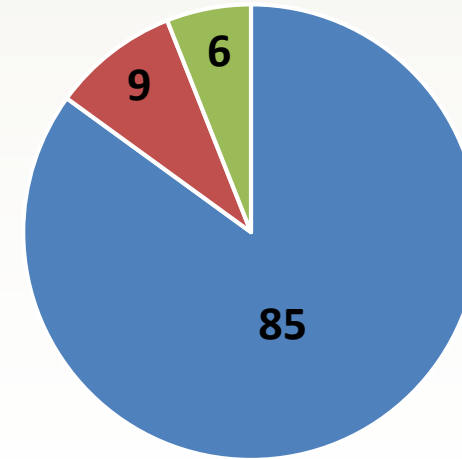
Hardwood



Pine bark

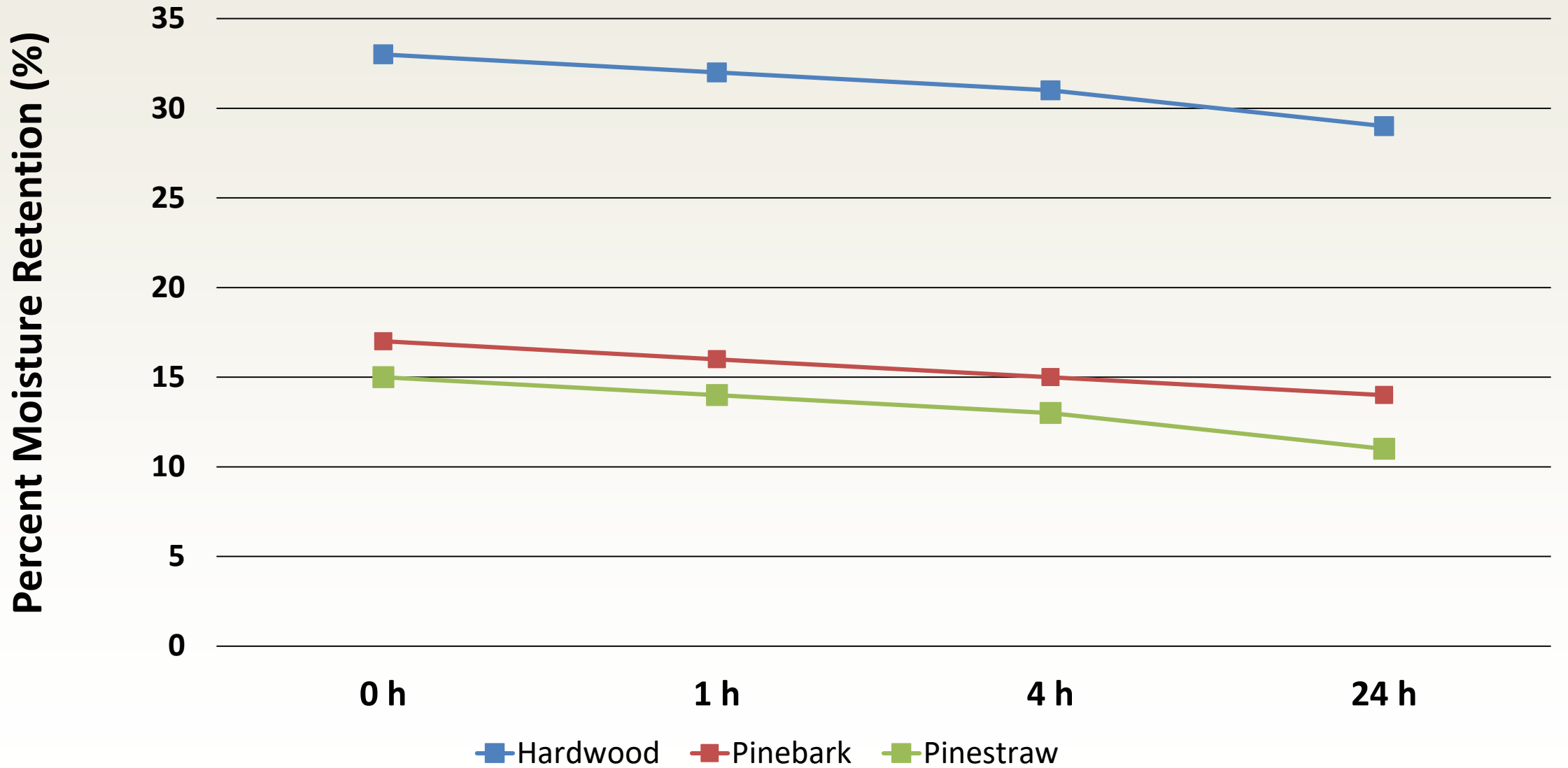


Pinestraw



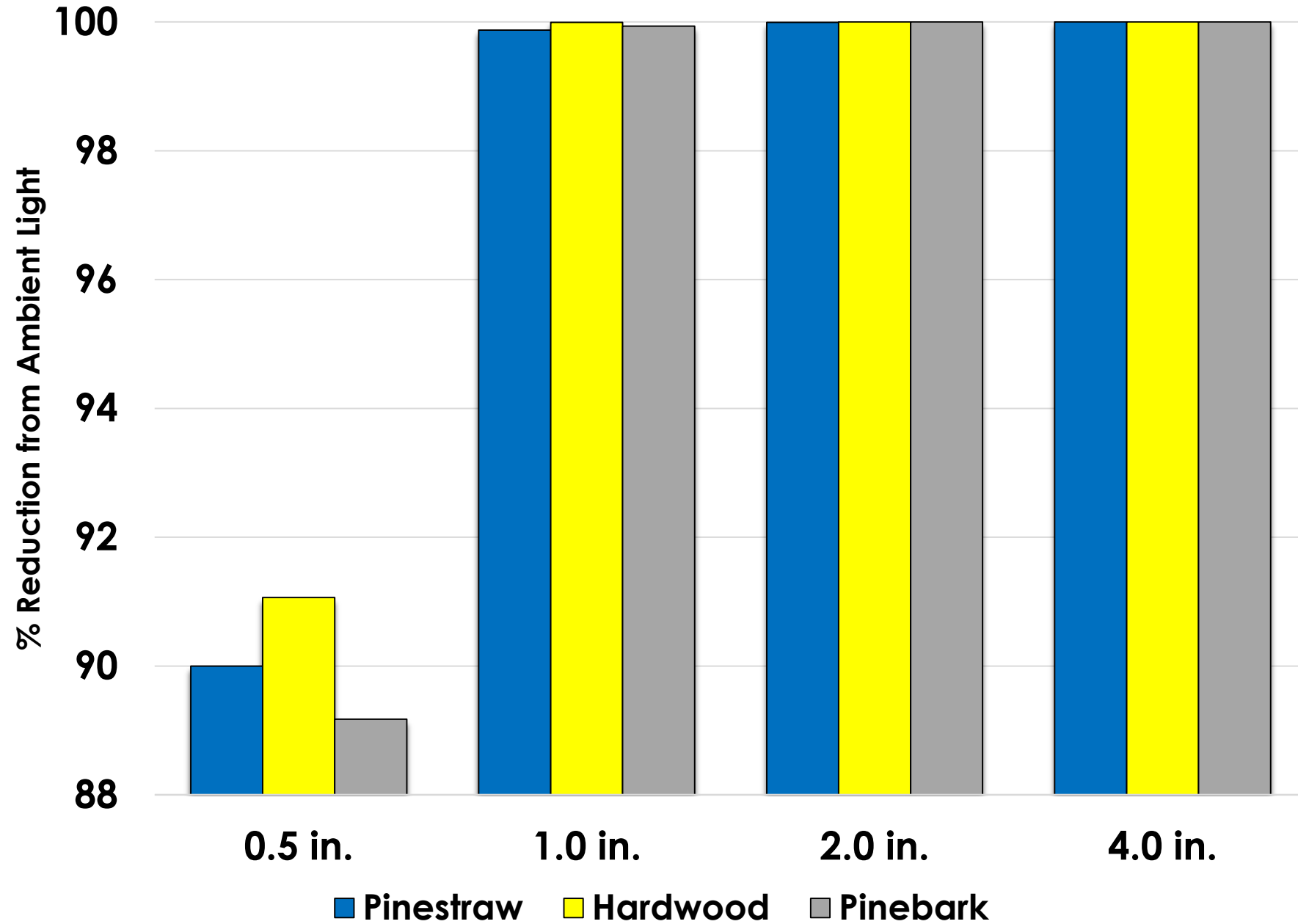
■ Air ■ Solid (mulch) ■ Water

Water Holding Capacity



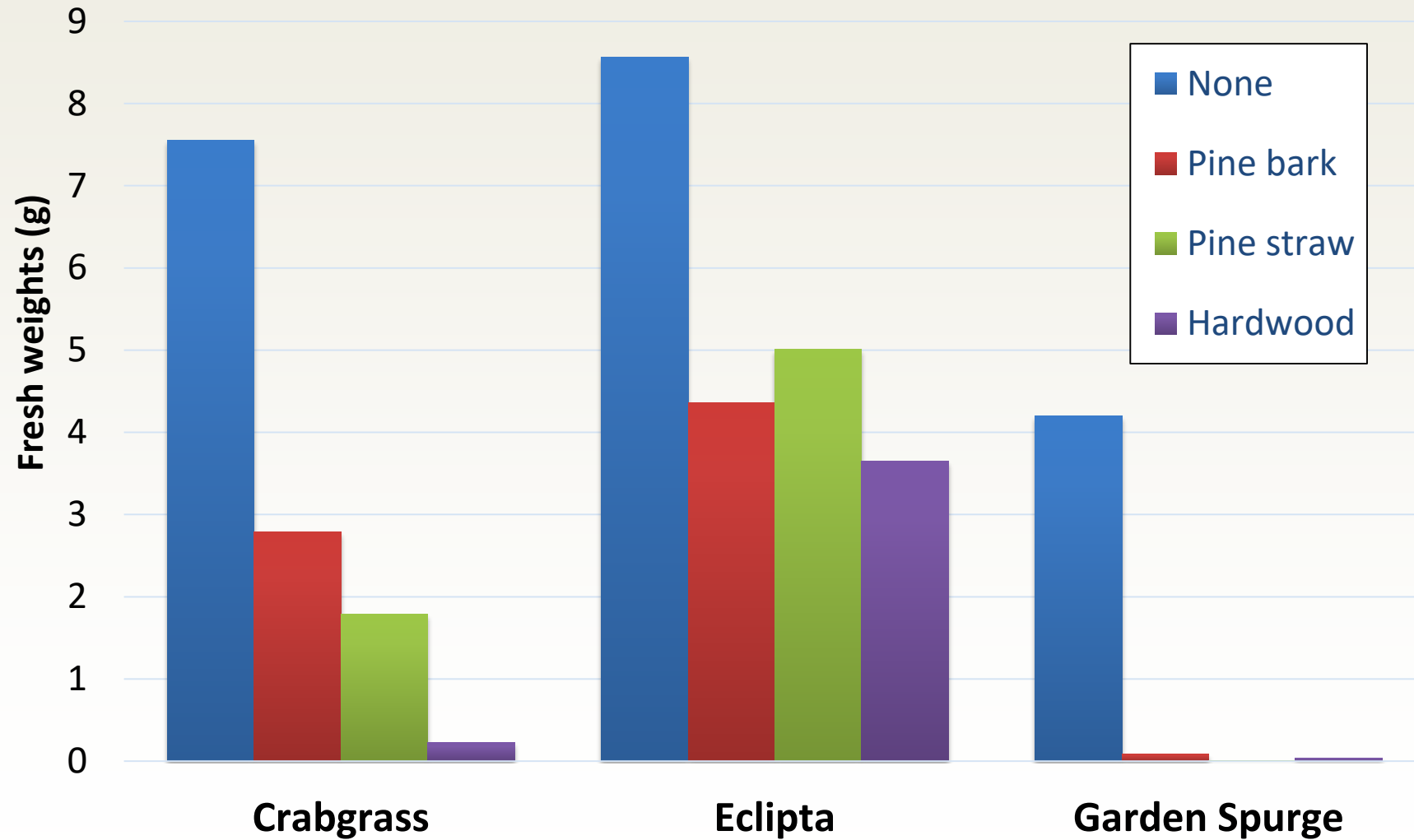
Impacts of Mulch on Light Levels; 16 weeks

35

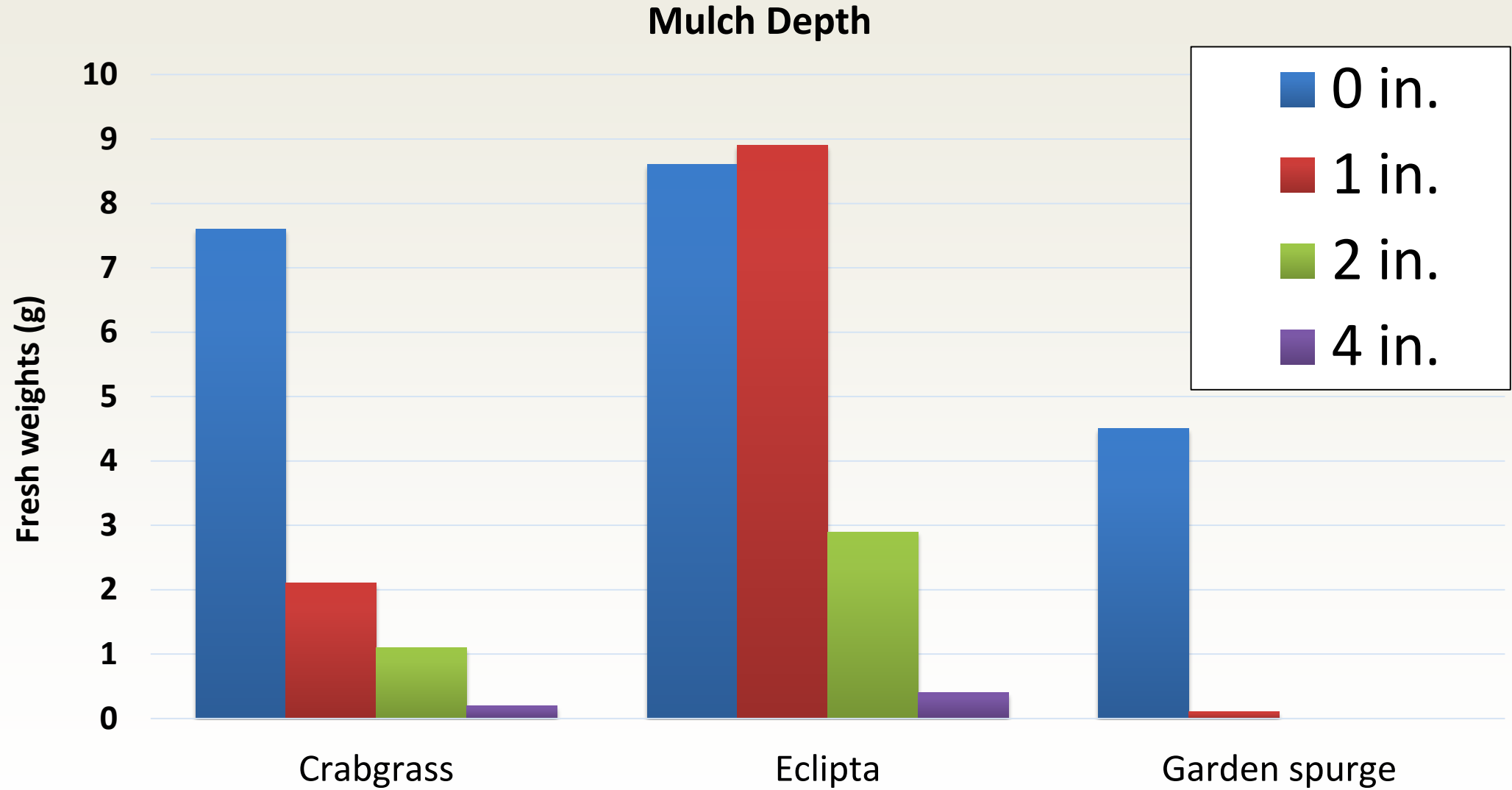


DO MULCH TYPES DIFFER?

Main Effects - Mulch Type



HOW DO MULCH TYPES DIFFER?



What about herbicides?

Results: Bioassay [Eclipta: Indaziflam(Marengo)]



Results: Bioassay [Crabgrass: Prodiamine (Barricade)]

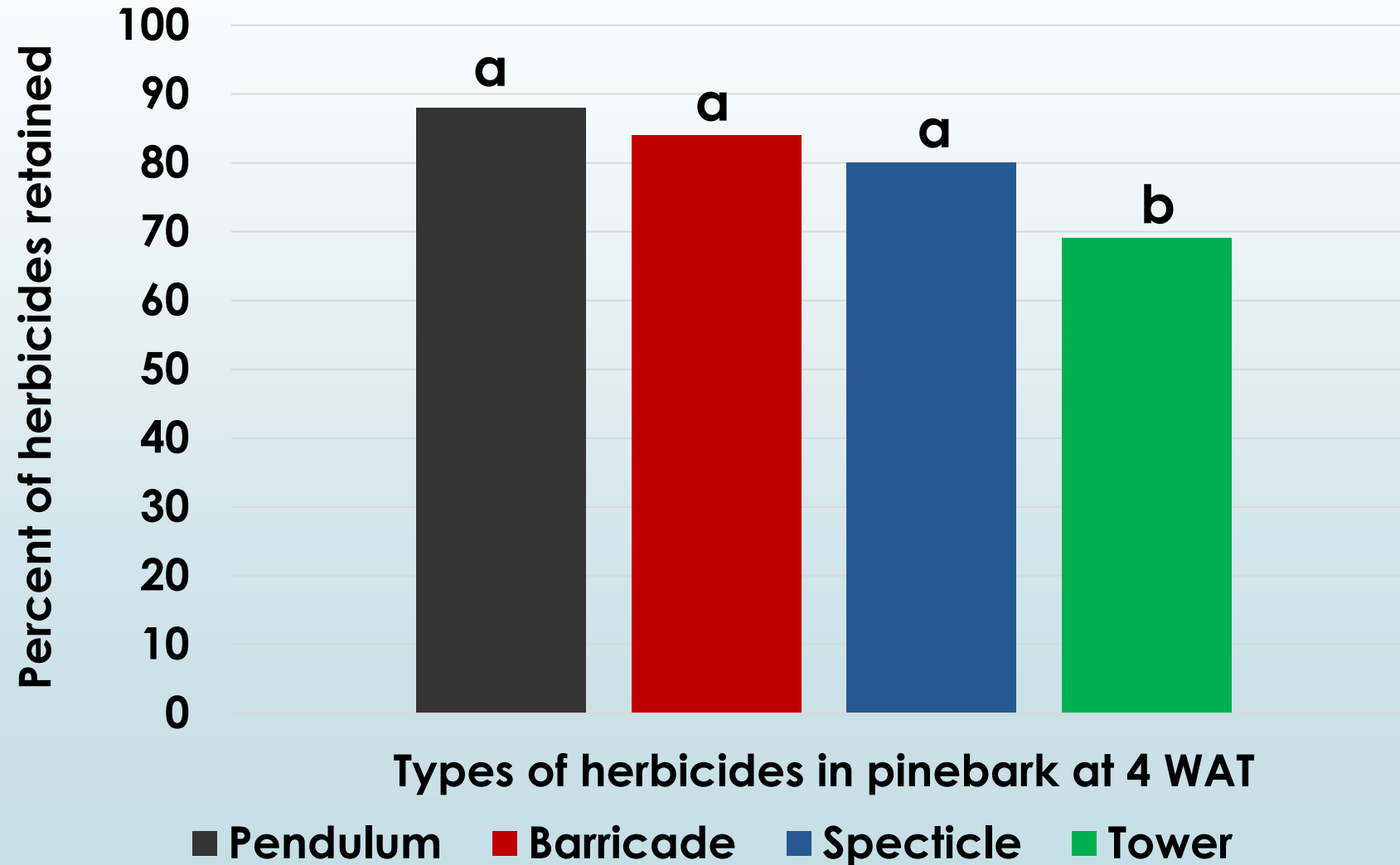


Results: Bioassay [Garden Spurge: dimethenamid-P + pendimethalin (Tower + pendulum)]



Results: Chemical assay

Percentage of Preemergence Herbicides Retained in Pinebark Mulch Material



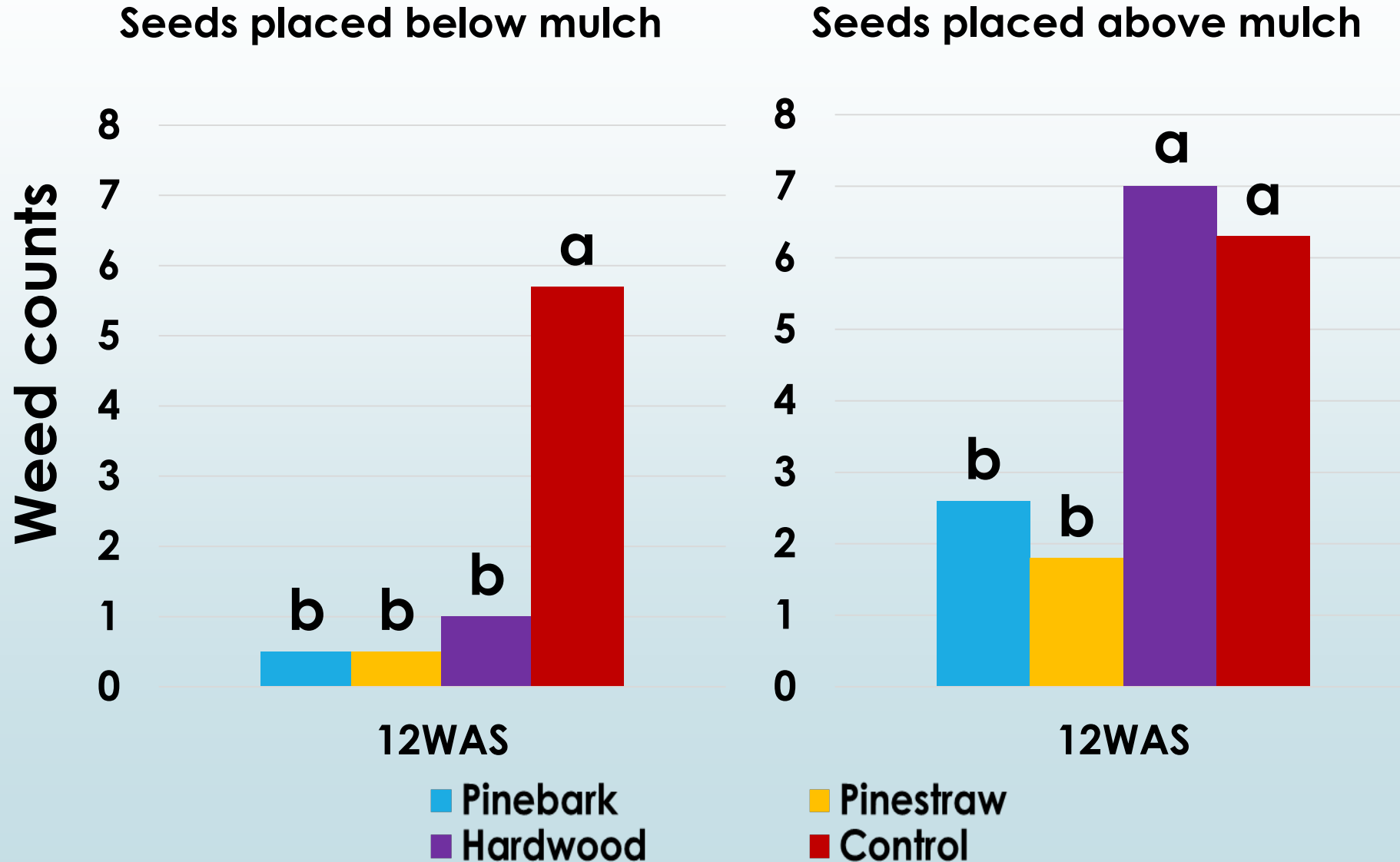
Results: Bioassay

Weed species	Mulch types	Herbicide	Detrimental effect on herbicide efficacy	
Eclipta	Pinestraw	Specticle	No	***
Eclipta	Pinebark	Specticle	No	
Eclipta	Hardwood	Specticle	Yes	
Crabgrass	Pinestraw	Barricade	No	***
Crabgrass	Pinebark	Barricade	Yes	
Crabgrass	Hardwood	Barricade	No	
Spurge	Pinestraw	Tower + Pendulum	No	***
Spurge	Pinebark	Tower + Pendulum	Reduced efficacy*	
Spurge	Hardwood	Tower + Pendulum	Reduced efficacy*	

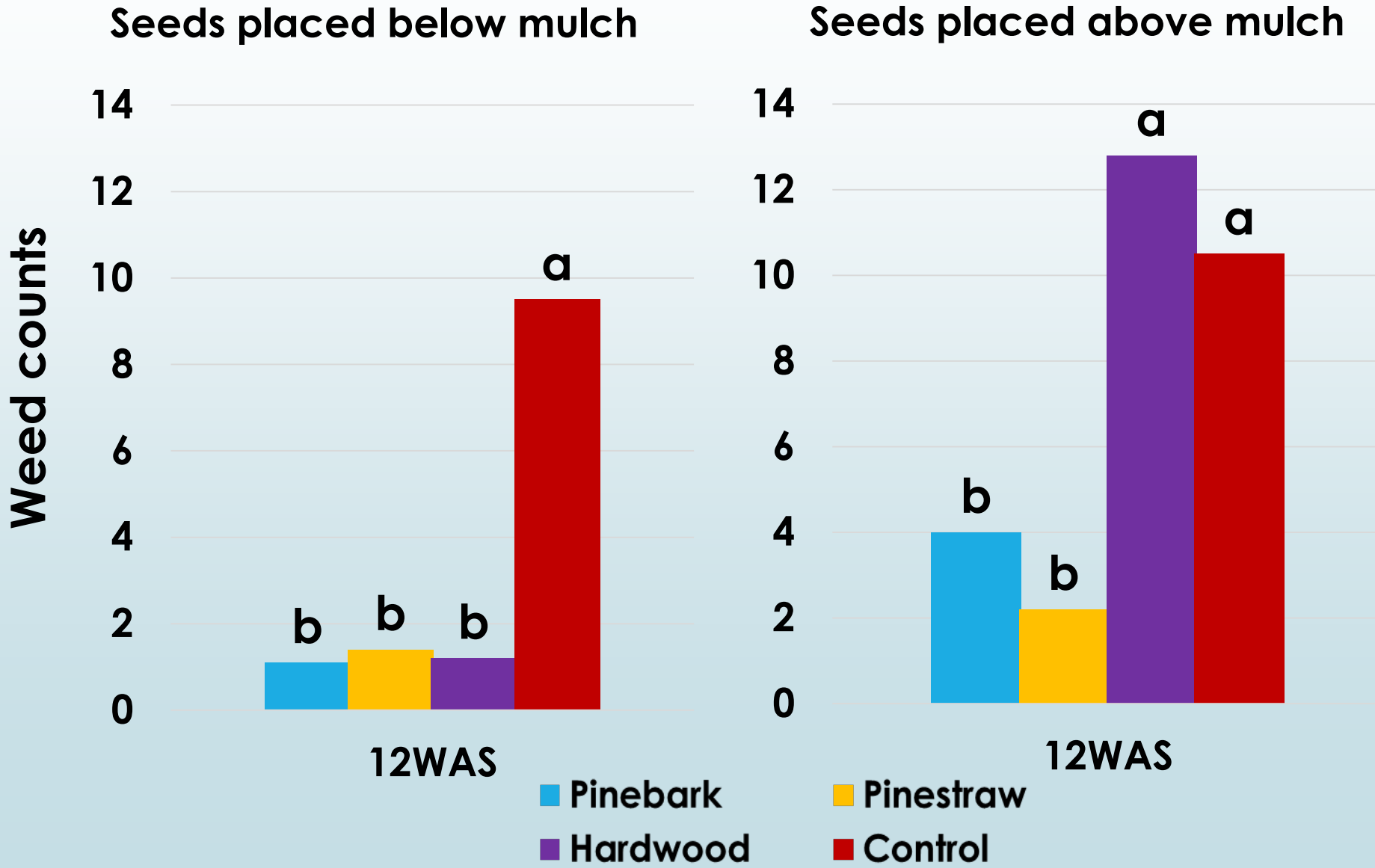
* Commercially acceptable (provided 94 to 95% spurge control)

IS HERBICIDE BINDING RUINING CONTROL?

Results (Greenhouse): Mulch type-Crabgrass



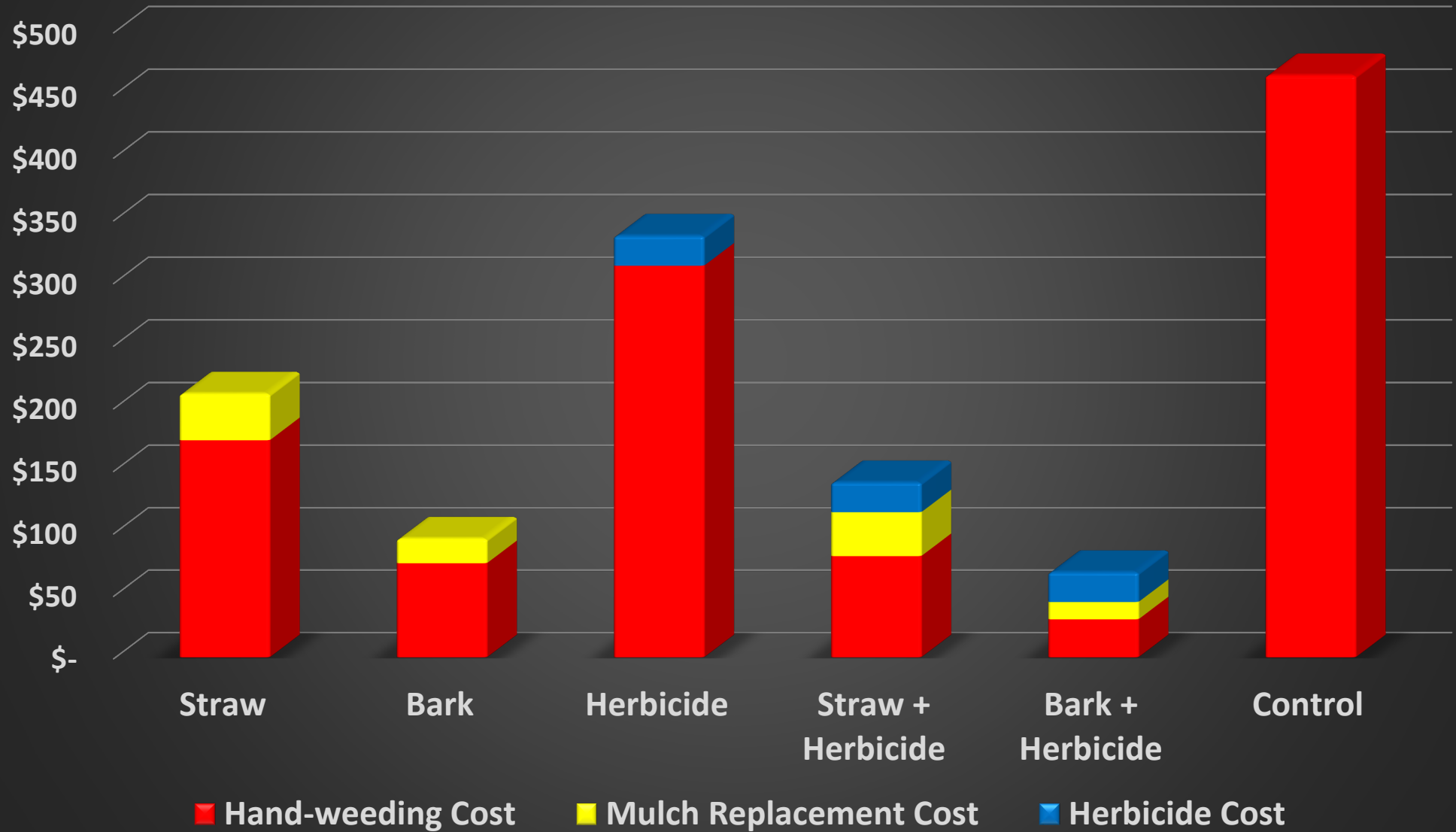
Results (Greenhouse): Mulch type-Garden Spurge



TAKE HOME MESSAGE

- **Mulch depth and particle size more important than mulch type**
- **Can be used with herbicides**
- **Herbicides are bound but bound on top where seeds are introduced**
- **Herbicides can extend control but....**

Estimated Annual Cost of Common Weed Control Methods (per 1,000 ft² Landscape Bed)



MULCH ADVANTAGES

- **Plant health advantages**
- **Will outperform a single or even multiple herbicide applications (at proper 2-3 in. depth)**
- **All/most will offer some weed control advantage**
- **How to chose?**

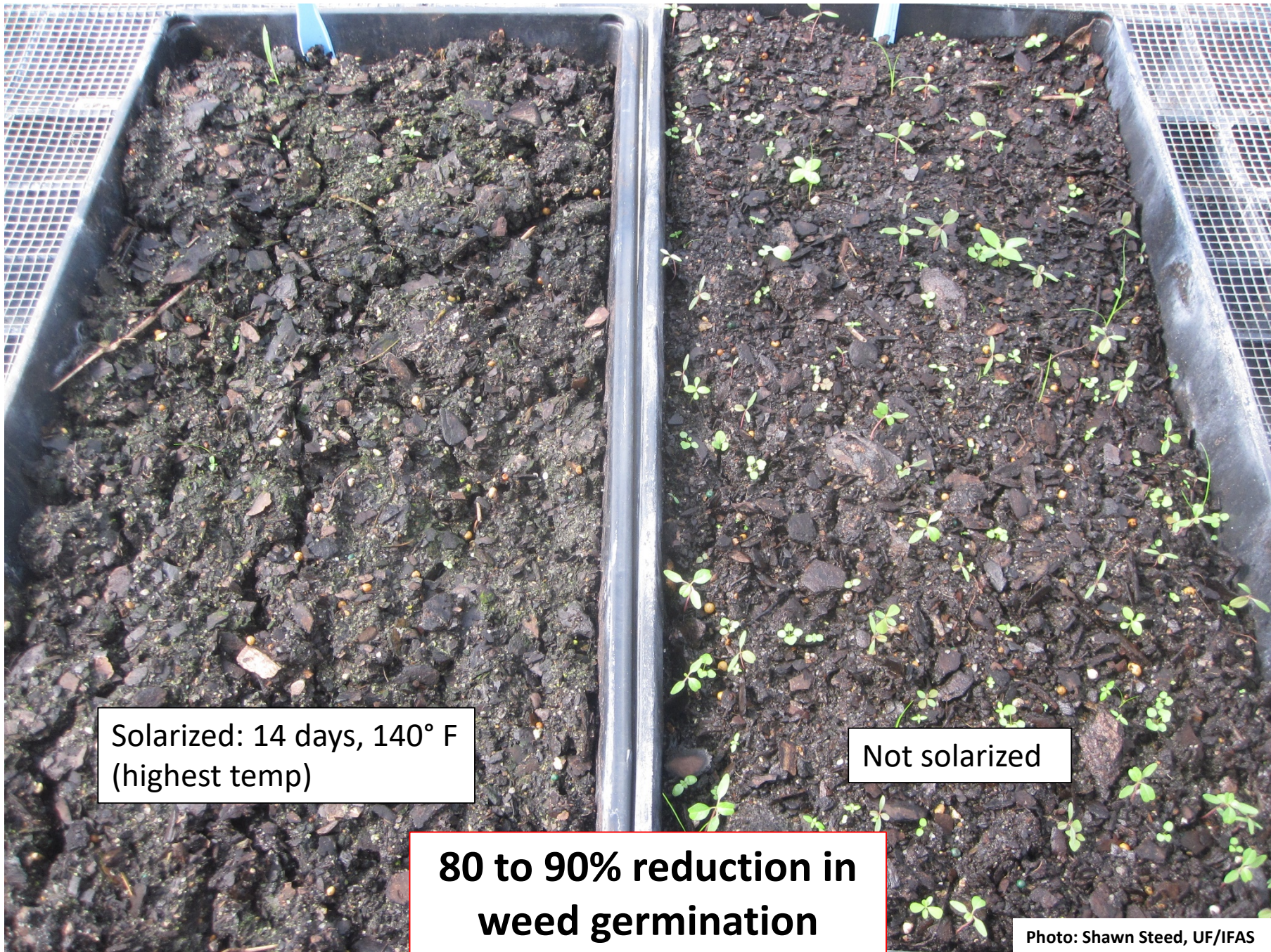
Mulch Type	Advantages	Disadvantages
Pinebark	Durable, good weed control	Very large particles require more mulch
Pinestraw	Often more coverage for cost, easy to apply	Degrades fast
Hardwoods	Depends on processing	Degrades faster than PB
Rock	Most durable	Higher costs, require fabric, debris
Melaleuca	Kills melaleuca trees, may be cheaper	Holds a lot of moisture within the mulch layer
Grass clippings, leaves, etc.	Cheap, good for plants	Not good for weed control

OTHER NON-CHEMICAL CONTROLS





**Shawn Steed, UF/IFAS
SARE Project OS13-17
"Large Scale Recycling of
Used Potting Media with
Solarization**



Solarized: 14 days, 140° F
(highest temp)

Not solarized

**80 to 90% reduction in
weed germination**

Photo: Shawn Steed, UF/IFAS

GOING WITH THE FLOW



**MY TIME IS UP AND THANKS
FOR YOURS!**