

# GLYPHOSATE BRIEFING



# OUTLINE

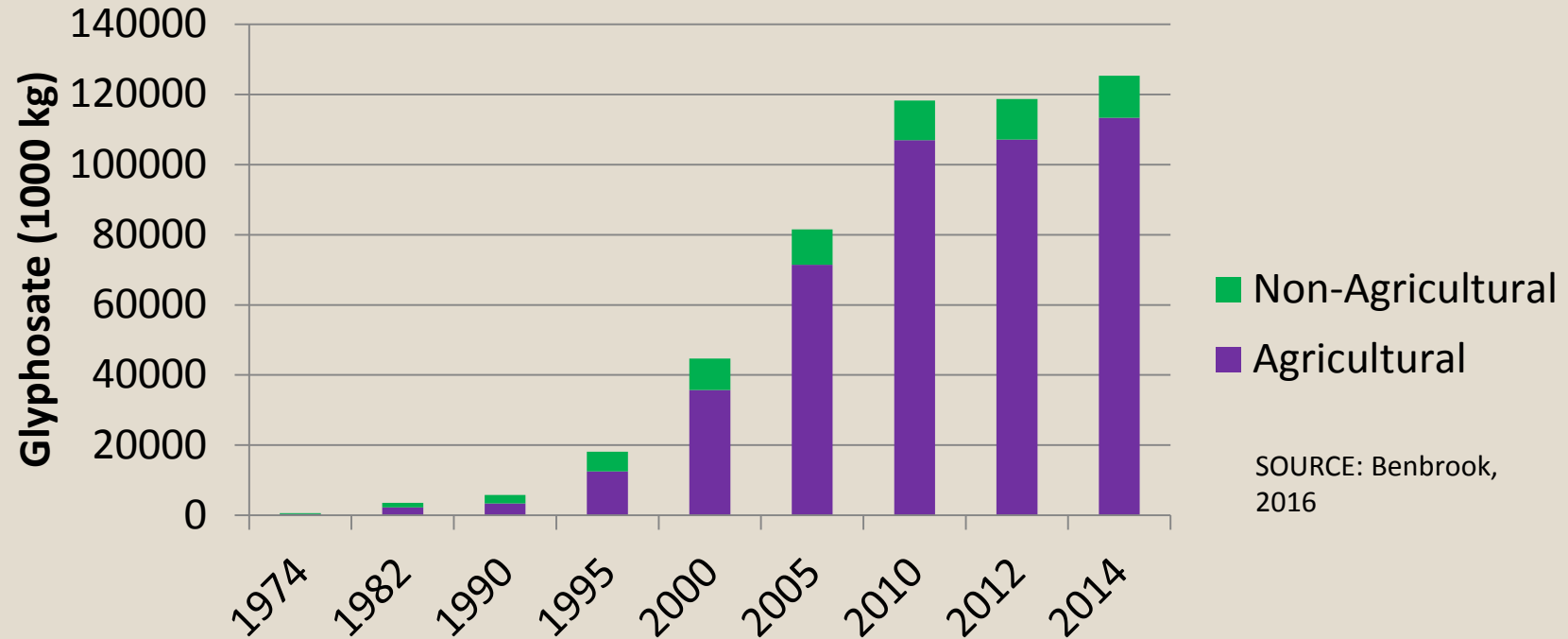
- Background on Glyphosate
- Use Areas
- Public Concerns
- Current Bans
- Options for Martin County

# BACKGROUND ON GLYPHOSATE

# WHAT IS GLYPHOSATE

- A type of herbicide used to control or kill plants
- World's most commonly used herbicide

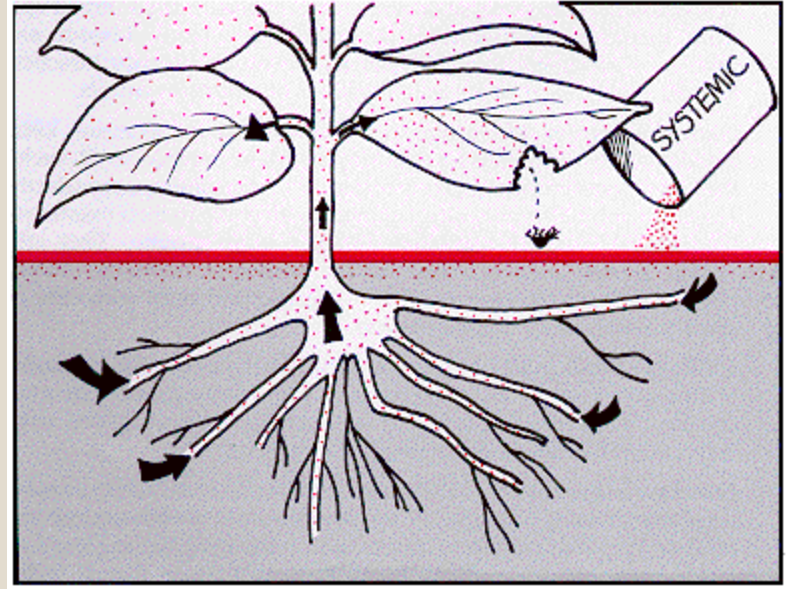


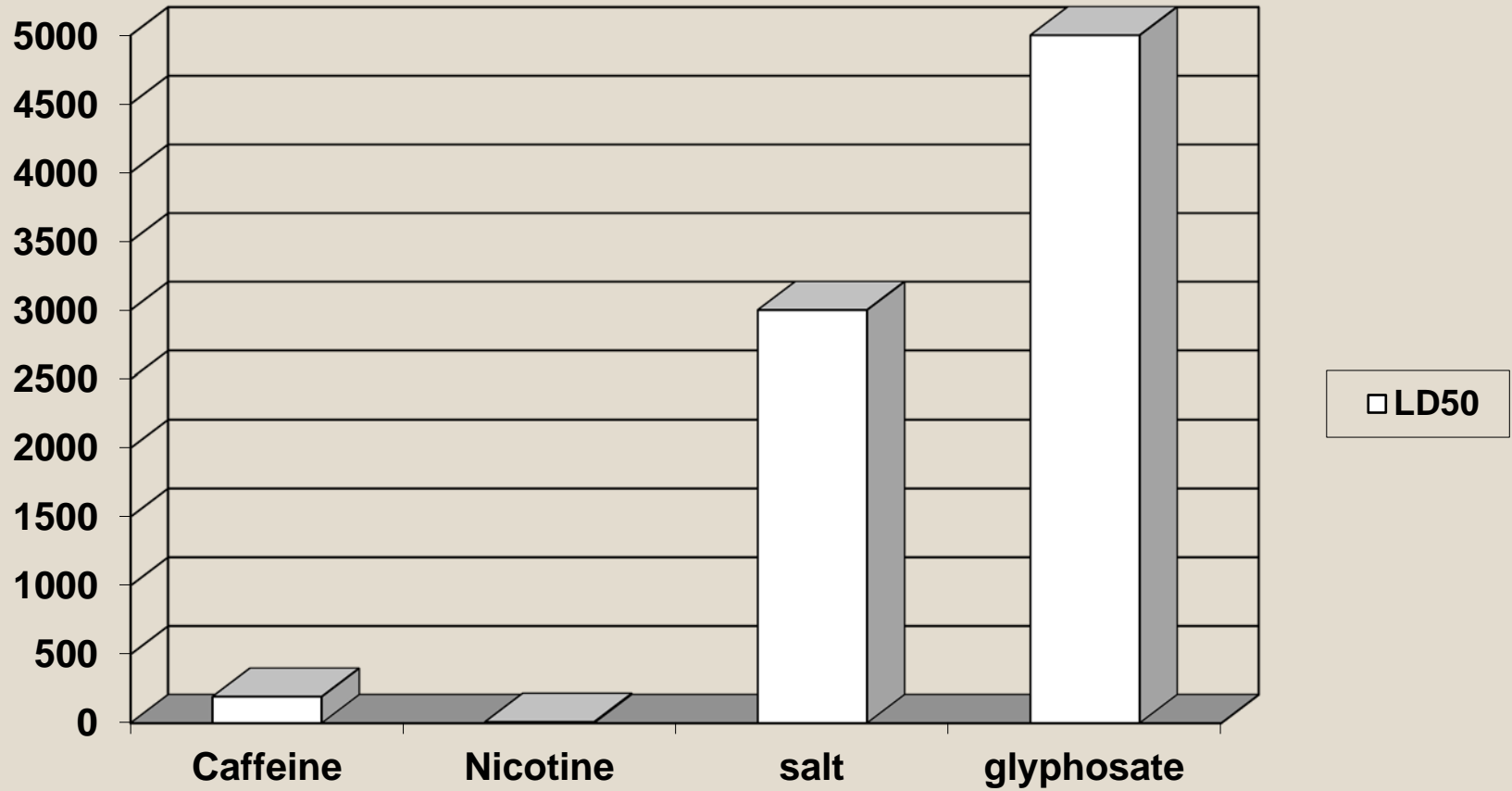


- Agriculture accounts for over 90% of use
- 9% is used for other purposes

# WHY DO WE USE GLYPHOSATE

- Systemic
- Non-selective
- Non-volatile
- Effective and relatively inexpensive
- Low mammalian toxicity



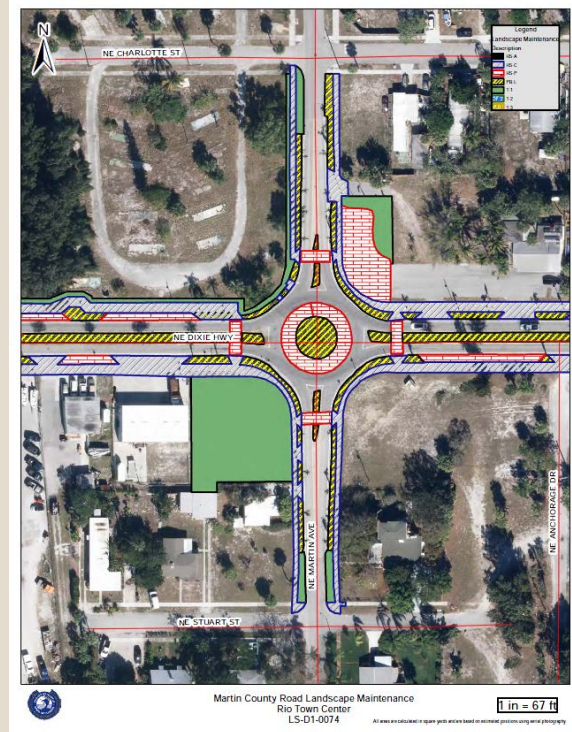


\*The higher the number, the LOWER the toxicity

WHERE DO WE USE  
GLYPHOSATE?



# LANDSCAPE/RIGHT OF WAYS



# PARKS





# DRAINAGE DITCHES



## STORMWATER TREATMENT AREAS





# PRESERVE AND CONSERVATION LANDS

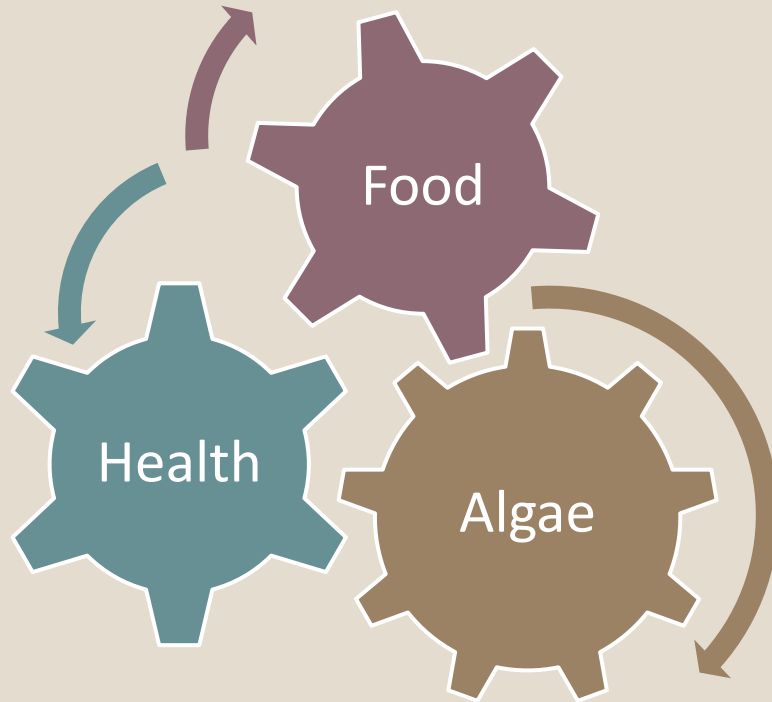


# HOW MUCH ARE WE USING?

- 965 Gallons formulated product utilized in 2017
  - Land Sites: 690 Gallons
  - Water Sites: 275 Gallons
- Chemical cost is ~\$20,000

# CONCERNS REGARDING USE OF GLYPHOSATE

# RESIDENT CONCERNS





# GLYPHOSATE AND FOOD SUPPLY

- Genetically Engineered Crops- “Roundup Ready”
- Preharvest- Accelerates Drying
- Post Harvest
- Post Harvest/Pre-emergence



# GLYPHOSATE AND HUMAN HEALTH

- Possibly Carcinogenic
  - International Agency for Research on Cancer
- Not likely to be carcinogenic to humans
  - Environmental Protection Agency
  - Joint Food and Agriculture Organization of United Nations and World Health Organization
  - European Food Safety Authority
  - Regulatory bodies in Japan, Canada, Australia, New Zealand

# GLYPHOSATE AND ALGAE

- Phosphonate herbicide
- Lake Erie watershed- Algal blooms
- Glyphosate has + and - influences on phytoplankton community structure (Saxton et al. 2011; Wang et al. 2016)
  - Kills less tolerant species
  - Nutrient source for tolerant species

# GLYPHOSATE AND ALGAE

- Lake Okeechobee-
  - Annual loading of phosphorus = 1.3 million lbs
  - Phosphorus from Glyphosate applied to Lake in 2017 = 230-306 lbs
  - Glyphosate contributed 0.02% of phosphorus
  - FWC performs maintenance control and keeps plants at low levels



# EPA REVIEW

# EPA REVIEW

- Environmental Protection Agency = regulatory authority to register pesticides
- Glyphosate can be safely used by following the label directions
  - Low toxicity for humans
  - Slightly toxic to birds
  - Practically nontoxic to fish, aquatic invertebrates and honeybees

# EPA MITIGATION

- Application site restrictions on certain products
  - Roundup cannot legally be applied to water due to surfactant toxicity to fish
  - Rodeo can be applied to water because it does not have the surfactant

## 3.2 Environmental Hazards

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.

# EPA RE-REVIEW PROCESS

- Reviewed every 15 years
- Glyphosate is currently in the review process
  - December 2017- draft human health and ecological risk assessments were released
  - Draft review indicates that it is not likely to be carcinogenic



# EPA REVIEW

## ■ What's next?

- Proposed interim registration review decision expected in 2019
- Will include mitigation measures to reduce impact if needed

WHAT CAN MARTIN COUNTY DO?

# BAN MODELS

- Integrated Pest Management (IPM)
  - North Miami Beach, New Jersey
- Use Restrictions on Government Sites
  - Chicago, Boulder, Irvine, City of Miami Beach
- Target Specific Restrictions: Invasive weeds only
  - Vancouver

# WHAT CAN WE DO?

- Florida Pesticide Law
  - F.S.S. 487.011-487.175
  - F.S.S. 487.051 (2) Pre-empts local ban
- Self Regulate County Use

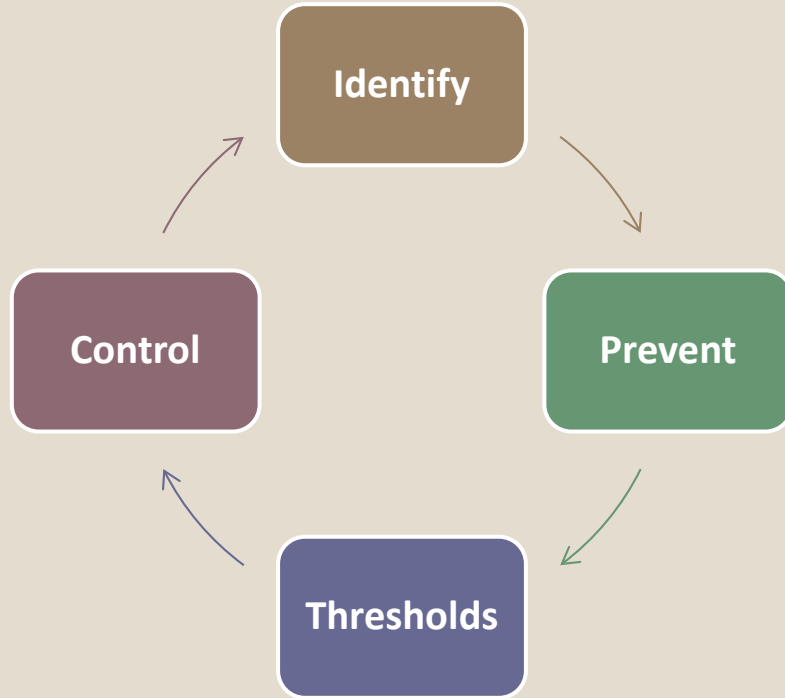
# UF IFAS

- Issued glyphosate fact sheet on September 17<sup>th</sup>, 2018
- “Given the lack of any new evidence that would steer us otherwise, we continue to recommend glyphosate as a weed control tool.”
- Recommend always following label, wearing Personal Protective Equipment and training for applicator
- Support IPM

# POTENTIAL ACTIONS

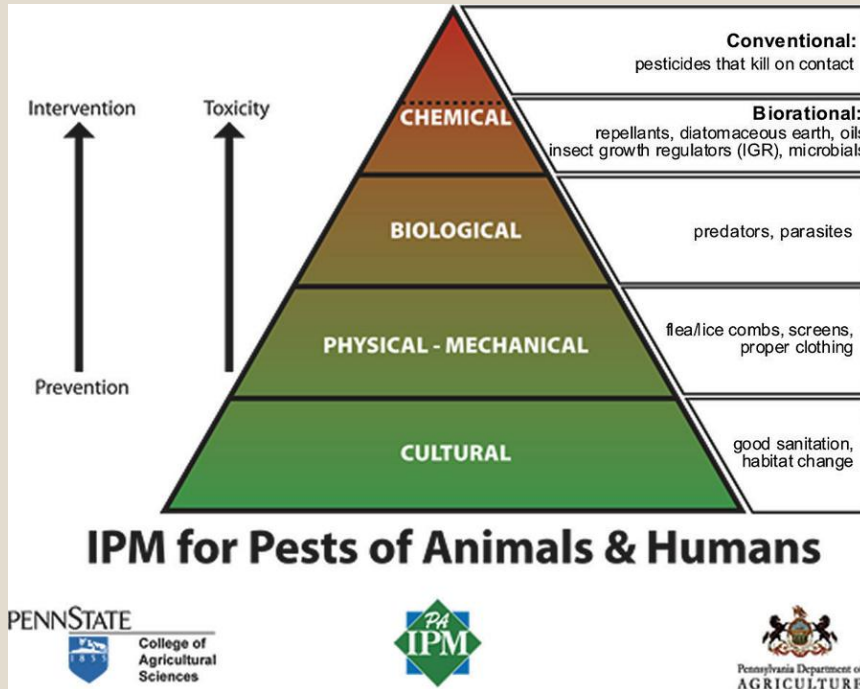
- Recommended: Adoption of formal IPM Program
  - EPA and UF/IFAS recommendation
  - Pesticide Stewardship Working Group
- Alternative Actions:
  - Site-specific use restrictions
  - Complete ban on County properties

# INTEGRATED PEST MANAGEMENT



- Effective and environmentally sensitive
- Focuses on prevention
- Set action thresholds

# INTEGRATED PEST MANAGEMENT



## Control:

1. Cultural Control
2. Mechanical Control
3. Biological Control
4. Bio-rational Control
5. Conventional Control (contact)



# ALTERNATIVE CONTROL

- Mechanical Removal
  - Hand pulling weeds
  - String trimmers for fence lines
  - Aquatic harvesting
  - Shredding
- Physical Control
  - Prescribed fire for conservation lands
  - Torches



# ALTERNATIVE CONTROL

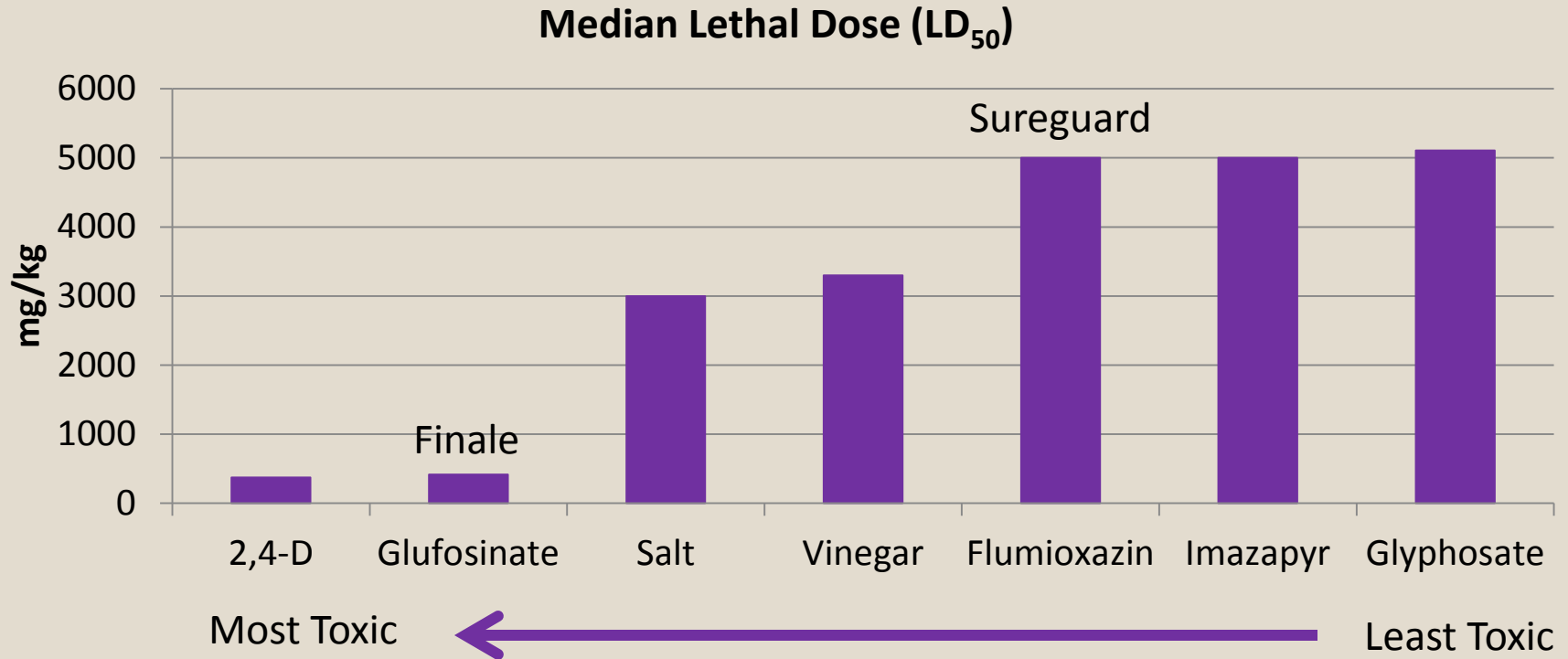
- Biological control
  - Natural Predators
- Example
  - Lygodium control with Brown lygodium moth



# CHEMICAL ALTERNATIVES

- Alternatives for land
  - 2,4-D
  - Glufosinate (Finale)
  - Flumioxazin (Sureguard)
- Alternatives for water
  - 2,4-D
  - Imazapyr
- UF recommends only using products labeled for use as pesticides

# CHEMICAL ALTERNATIVES



# OUTREACH AND EDUCATION

- Estimated that in Martin County
  - Public spent \$1.2 million on glyphosate = 72,500 gallons
  - County spent \$20,000 = 965 gallons
- Education opportunity on IPM in partnership with Extension

The screenshot shows a website with a yellow header featuring the text "Be Floridian Now" in a script font and the tagline "SAVING OUR LAKES, RIVERS, & ESTUARIES ONE YARD AT A TIME" in a smaller font. Below the header is a black navigation bar with the word "Menu" and a hamburger menu icon. The main content area has a large image of a man on a beach holding a duck-shaped inflatable ring. Overlaid on the image is the text "PROTECT OUR FUN." in large, bold, orange letters. Below this, it says "Skip the fertilizer this summer. And save our lagoon **for fun.**". At the bottom, there is an orange section with a circular logo of a pink flamingo on the left. To the right of the logo, the text "Less Lawn = MORE FUN" is displayed in bold. Below this, a paragraph explains the benefits of reducing lawn area: "Why sweat behind a lawn mower when you could be relaxing on the Lagoon? Getting rid of the grass leaves you more time for fun — and helps keep fertilizer runoff from ruining our waterways. Cut a corner or two, or dig up the whole lawn and put an easy-care yard in its place. Check out our tips to get started." At the bottom right of this section is a pink button labeled "Get Started".

# WHY INTEGRATED PEST MANAGEMENT?

- Careful evaluation of ALL pesticide use
- Focuses on prevention and utilizing multiple control measures
- Economical and environmentally conscious
- Encourages pesticide stewardship ex: mode of action rotation
- Use IPM and set glyphosate use reduction goals for maintenance control

# ESTIMATED BAN ANNUAL BUDGET IMPACT

- Enhanced Landscape/Right of Way: \$200K
- Stormwater Treatment Areas: \$225K
- Drainage Ditches: \$30K
- Parks: \$190K
- Natural Areas: \$200K
- Golf Course: \$90K



# QUESTIONS

