



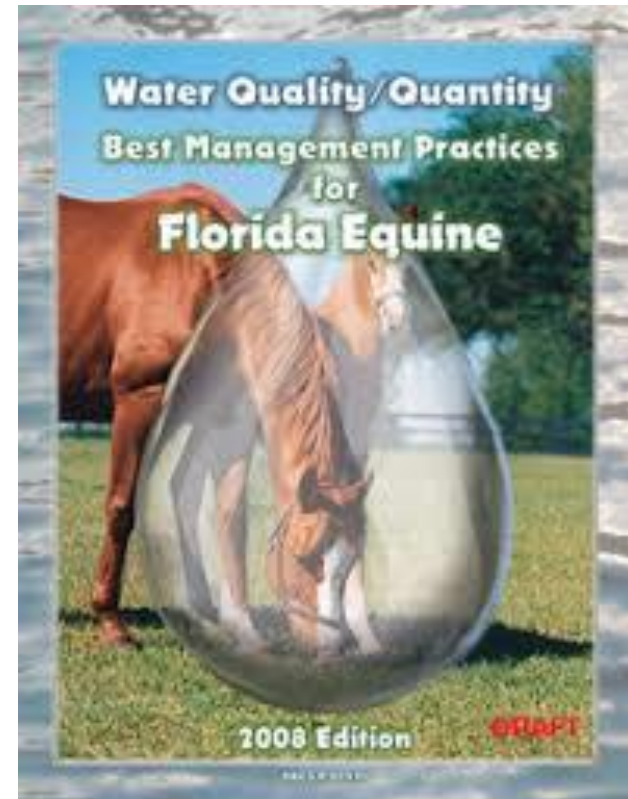
EQUINE BEST MANAGEMENT PRACTICES & PASTURE MANAGEMENT STRATEGIES

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Agenda

- Florida Friendly Landscaping and GI-BMP
- Equine Best Management Practices
- Pasture Management Strategies

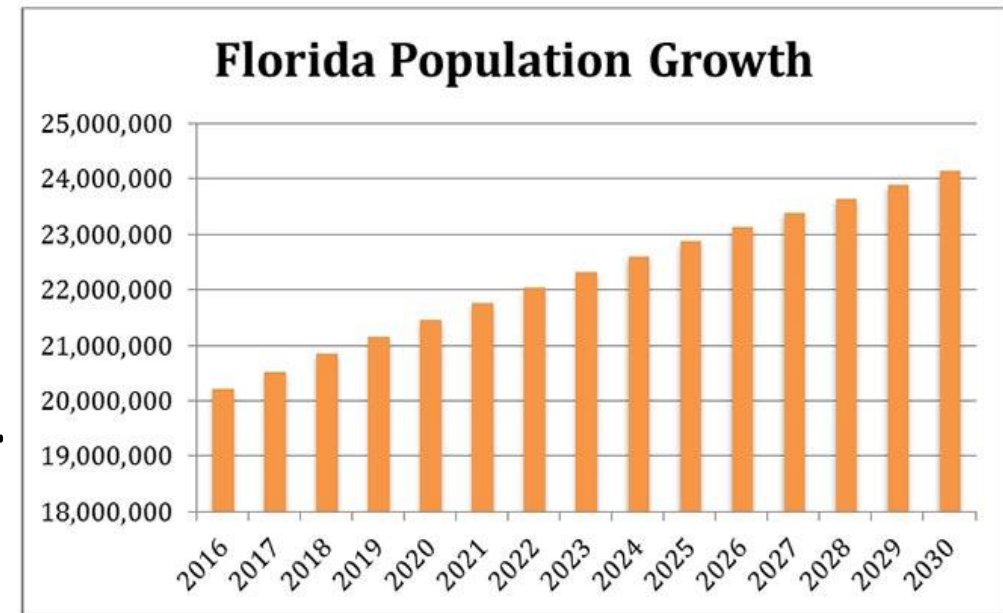


Objectives: Equine BMPs

- Examine the current situation.
- Why should we care?
- Describe the legislative processes involved with springs/water protection.
- What can you do moving forward?

Water in Florida

- Florida is home to 20+ million people.
- 3rd largest state!
- “No one retires and moves North”
- 1,000 People move here each day.
- Home to over 700 freshwater springs that feed the aquifers we rely on.
- Will require a 20% increase in water by 2030.



“ Florida is home to more large (first and second magnitude) springs than any other state in the nation. Springs are the window into the health of our groundwater, which is the source of 90 percent of drinking water for Floridians.”- DEP

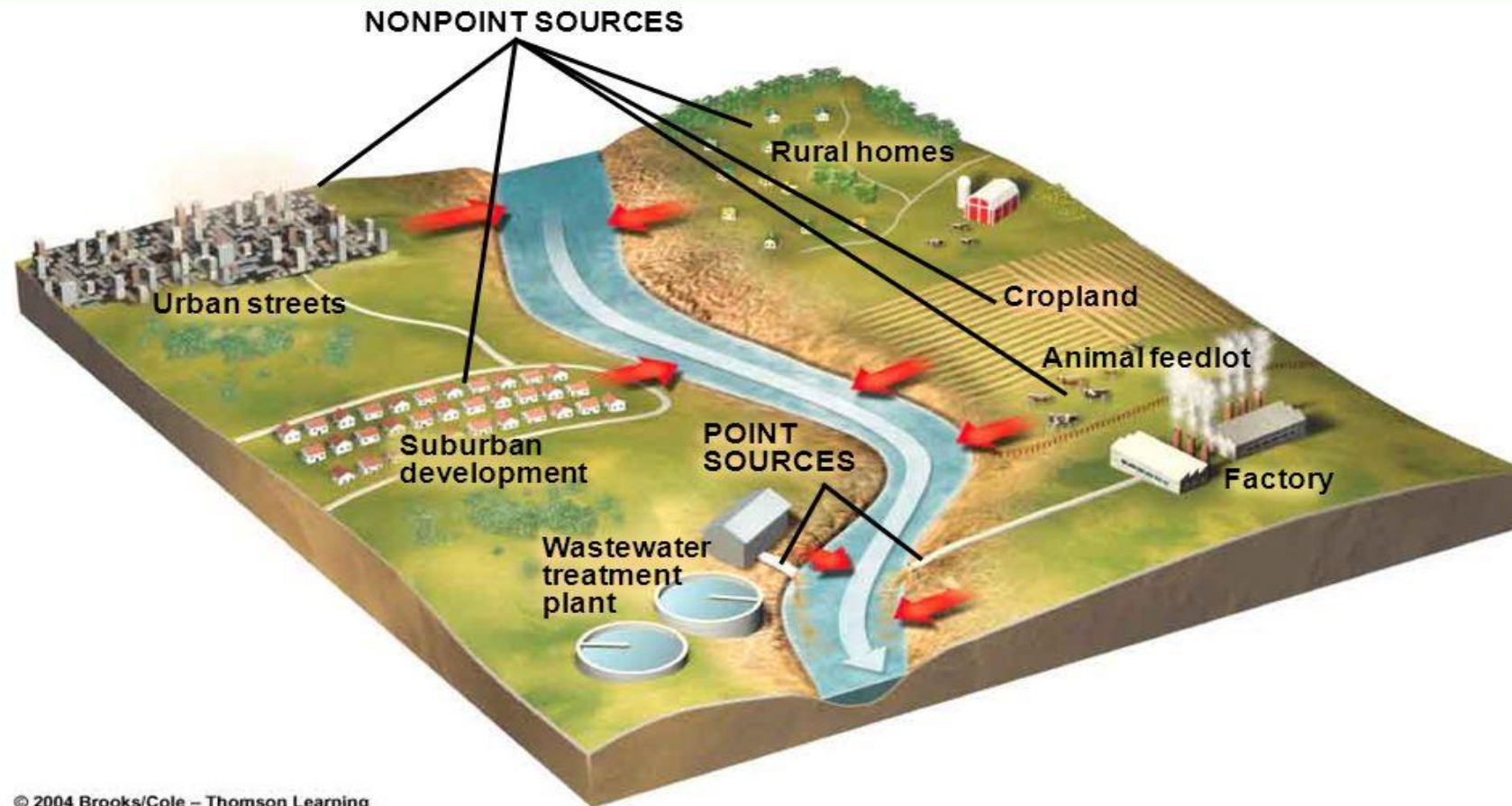
Water in Marion County

- Marion County is home to 355,000+ people.
- Prime location- Disney, rural lands, retirement destination.
- Springs and “chain of lakes” = water problems are easily transferrable.

Current Situation

- All of these water sources have been under scrutiny for water quality concerns.
- Point source pollution- we can trace it back.
 - Wastewater treatment plants, factories
- Non-point source pollution- difficult to trace and hard to correct.
 - Agriculture
 - Residential landscapes

Point and Nonpoint Sources



What's the big deal?

- Eutrophication: Excessive richness of nutrients in a lake or other body of water, frequently due to runoff from the land, which causes a dense growth of plant life and death of animal life from lack of oxygen.
- Nitrogen and Phosphorus are common “nutrients” in the agricultural realm.
 - These *nutrients* become *pollutants*.

Algal Blooms



Reduced Sunlight



Reduced Oxygen

**Aquatic
Life
Withers**



**Water
Quality
Impairment**

Florida Department of Environmental Protection

- Develops plans for the areas surrounding these waters: *Basin Management Action Plans* (BMAP)
- BMAPs are on a 20 year continuum and are revised every 5 years.
- These plans aim to reduce the overall nutrient loading of these waters which feed the aquifers.
- BMAPs are in place to reduce *Total Maximum Daily Loads (TMDL)* of a nutrient/pollutant.
 - *TMDL- the maximum amount of a nutrient that can enter a water body and still allow that water body to meet water quality standards.*

UF/IFAS: SOLUTIONS FOR YOUR YARD

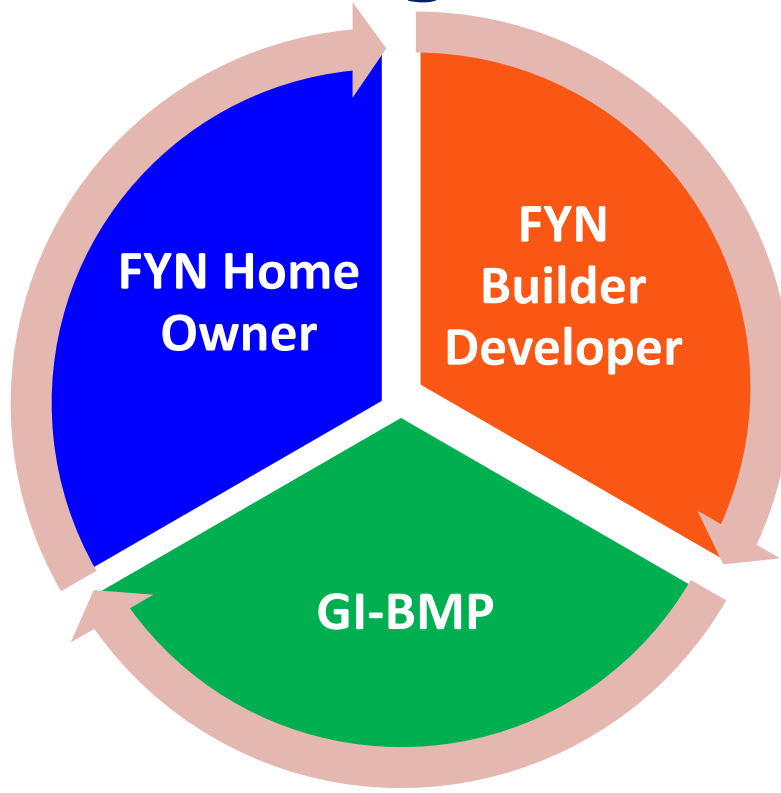


The Science-Based Integrated Approach to Water and Landscape Management

FFL protects Florida's unique natural resources by conserving water, reducing pollution, creating wildlife habitat, and preventing erosion.

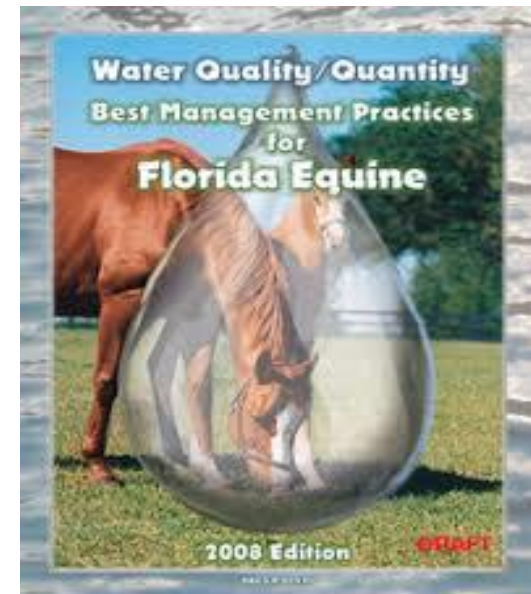
Any landscape can be Florida-Friendly!

Florida-Friendly Landscaping™ Program



Agriculture in BMAPs

- As agriculturists, the land does not work for you, you work for the land.
- Development of Best Management Practices Manual for Equine operations.
- What are BMP's?
 - ❑ *BMP's are field tested practices said to be most effective for improving water quality.*



Equine Best Management Practices

- Nutrient Management
- Manure Management
- Sediment & Erosion Control
- Pasture Management
- Stormwater Management
- Water Resource Protection
- Equine Watering Requirements & Sources
- Animal Mortality Management



Manure Management

- An average 1000 lb horse will produce close to 50 lbs of manure each day, almost 10 tons per year!
- Manure contains Nitrogen & Phosphorus- which if not managed properly could contribute to water quality impairment.
- What are some options for manure management?

Manure Management

- Haul it off- \$\$, makes the most sense for larger operations with limited space and man-power.
- Stockpile- This is an ok option as long as some criteria is met
 - Impervious surface
 - Not located near water source (Natural or well)
 - Have means to cover the pile
- Compost- Turn waste into worth

Compost

- Easy, effective way to manage manure on a small farm.
- Composting raw manure will kill weed seeds, parasites, and pathogens.
- Reduce waste volume by 30-40%.
- Create a valuable soil amendment!



Rapid-fire compost how-to:

- **Moisture**- resemble a wrung out sponge 40-50% moisture.
- **Temperature**- 130-150 degrees
- **Oxygen**- Turn the pile to incorporate air, or insert PVC pipe with air holes.
- **Nitrogen:Carbon ratio**- 30:1 is ideal.
Greens = Nitrogen & Browns = Carbon.
- **Time**- 4 months to generate a finished batch of compost. (Build structure accordingly).

Compost Examples:



Trouble Shooting:

Symptom	Cause	Solution
Compost pile will not get hot	Pile may be too dry	Add water
	Pile may contain too much bedding (carbon)	Add fertilizer or manure to supply more nitrogen
	Pile may be too wet	Add more bulking materials; cover from rain
	Pile may be too small	Build a bigger pile
Compost has foul smell	Pile may be too wet	Add more bulking materials and turn pile
	Pile may need more air	Turn the pile more often
	Pile may contain a dead animal	Remove the carcass
Compost pile doesn't seem to be breaking down	Pile may be too dry	Add water
	Pile may be too small; not holding heat	Build a bigger pile
	Pile might not contain enough nitrogen	Add fertilizer or manure to supply more nitrogen

Warren, L. 2005 Florida Equine Institute Proceedings. Managing Horse Manure by Composting.

How to ensure your farm is up to snuff?

- Contact your Extension Agent to ensure you are implementing BMPs.
- FDACS has a field technician that will formally enroll you in the BMP program with a Notice of Intent (NOI).
- “But I don’t want some governmental red-flag on my farm!”
- Actually...Enrolling in this program will have the opposite affect, DEP is busy.
- *Many farms in Marion County are already enrolled!*

What does the future hold?

- *Choices...*
- Sign up voluntarily with FDACS, **enroll** in the BMP program.
- **<https://www.freshfromflorida.com/Agriculture-Industry/Water/Agricultural-Best-Management-Practices>**
- **Monitor** your own water quality. (self-funded)
- Do nothing and risk the manure police (DEP) dropping in and subjecting you to monetary punishment until one of the above options is put in place.

Teamwork makes the dream work!

- The equine industry is a huge part of the culture here.
- Let's serve as an example to other industries; greater good effect!
- UF/IFAS is NOT regulatory, we are an educational resource to help you.
- Start with your county extension agent and receive timely, pertinent information before this becomes a larger issue.

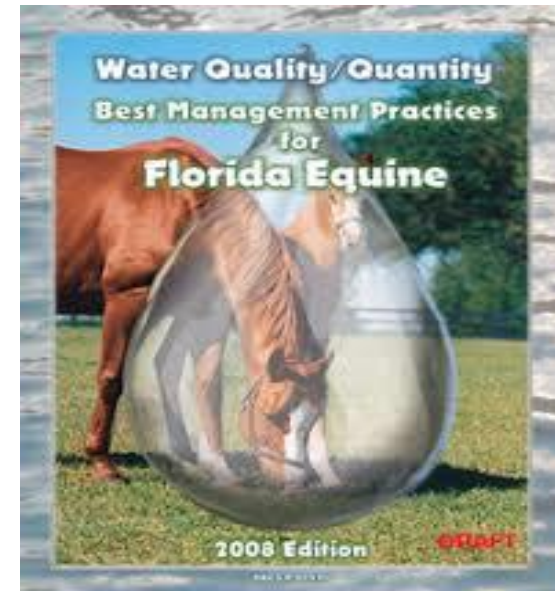
Resources:

- To get a free copy of the Equine Best Management Practices manual:

visit-

http://www.freshfromflorida.com/content/download/30687/760953/Equine_Updated.pdf

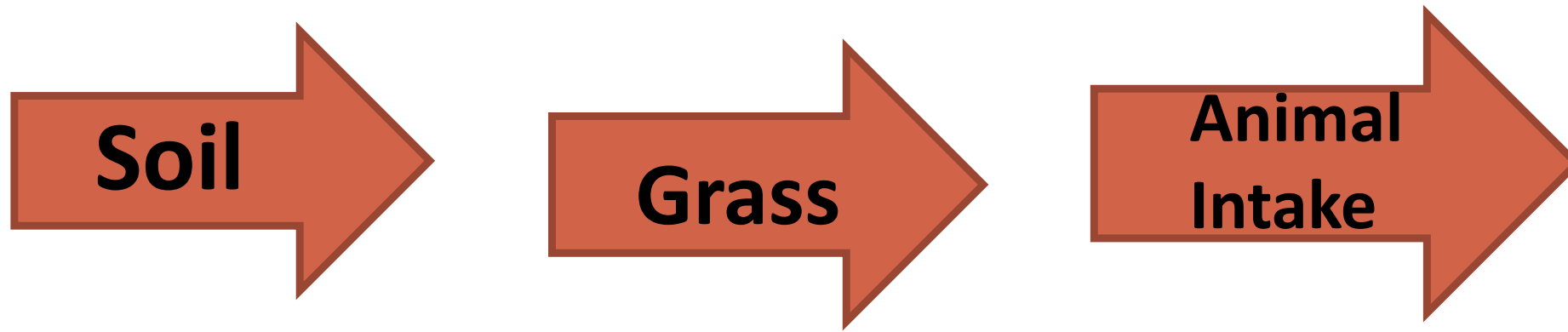
Or, stop by my office and pick one up!
Also available for pick up at FTBOA.



Pasture Management

- Good pasture management = following best management practices.
- ***Maximize forage yield***
- ***Minimize cost of supplemental forages/feed***
- ***Minimize weeds***
- ***Minimize erosion***
- ***Maintain root structure to uptake nutrients***
- ***Aesthetic value of your farm***

Pasture Management & Strategies



Forage Potential

Forage species	J	F	M	A	M	J	J	A	S	O	N	D	Productivity* (lb DM/acre)
Limpograss				Light	Light	Dark	Dark	Dark	Dark	Light	Red	Red	9000-12000
Pensacola Bahiagrass				Light	Light	Dark	Dark	Dark	Dark	Light			3000-10000
Argentine Bahiagrass					Light	Dark	Dark	Dark	Light				5000-14000
Hybrid Bermudagrass					Light	Dark	Dark	Dark	Light				7000-14000
Pearl Millet						Dark	Dark	Dark					5000-10000
Rye	Dark	Dark										Light	2000-5000
Oat	Dark	Dark										Light	2000-5000
Annual Ryegrass	Light	Light	Dark	Dark	Light							Light	2000-5000
Alfalfa			Light	Light	Light	Light	Light	Light	Dark	Dark	Dark		5000-8000
Arrowleaf clover		Light	Light	Light									2000-4000
Crimson Clover	Light	Light	Light	Light								Light	2000-4000
White clover		Light	Light	Light	Light	Light							2000-4000

Starts with Soil!

- Don't guess get a soil test every 2-3 years.
- Healthy soil requires:
 - Good pH

Macronutrients

- **N**- Component of Chlorophyll (plants grow) and amino acid structure (not tested)
- **P**- Metabolism, root development, and flower development
- **K**- Temperature regulation, energy conversion from storage, immunity

Secondary Nutrients- Ca, Mg, S

Micronutrients

- **B, Cu, Fe, Cl, Mn, Mo, Zn**



Tissue Test- Another soil tool

- Which nutrient does a tissue test help identify?
- Why is a soil analysis not always sufficient for Phosphorus?
- Gather a couple handfuls of leaves to be sent in for a tissue test- must perform a tissue test when there is tissue to test! (Not Winter)
 - Allow samples to dry
- A tissue test form can be obtained from the UF Soils lab website, or your local Extension Agent



Become a Grass Farmer

- Hay is expensive- How many of you buy hay year-round?
- Let's talk: Stocking rate
- It is NOT a one size fits all rule. ***Land type, soil type, features, and amount of land*** will determine your carrying capacity.
- How can we maximize space on a small farm?

Methods to maximize space on a small farm:

- **Rotational grazing**
 - Rotate on a schedule that will allow the grass to recover- 3 week minimum in the growing season!
 - **Grazing rule:** *Allow animals to graze when grass is 8" and remove them when grass is grazed to 3".*
- **Sacrifice area**
 - Locate near water & shade with forage available.
- **Turn-out schedule**
 - Summer vs. Winter- up during the day when it is hot, out at night.

Stocking Recommendations:

Horses- 1 horse/ 2-5 acres

Cows- 1 Cow/ 1.5-4 acres

Grazing Management

Carrying Capacity, Stocking Rate, # of animals

Rotational grazing- Resting period

Sacrifice areas- Could be the tipping point for your horse operation.

Turn-out schedules (Horses)

Plant cool-season annuals

“I need to re-seed my Bahiagrass”

- Bahiagrass is a marathon runner, not a sprinter.
- Establishment is costly, make sure you do it correct.
- Key Elements:
 - **Water**- moisture is paramount to success of establishment!
 - **Temperature**- 80 degree soil temperature for the seeds to germinate.
 - **Fertilization**- Fertilize according to a soil analysis for new establishment, split application is preferred.

Bahiagrass



Weed management in Bahiagrass

- What is a weed?
- What do weeds need to grow:
 - Sunlight
 - Water
 - Space
 - Nutrients

What is the problem here?

Weed management cont.

- The best approach to weed management is an integrated approach:
 - **Mechanical control-** Mowing
 - **Biological control-** Beetles
 - **Chemical control-** Herbicides: *Follow the label and understand how to calibrate your equipment if spraying yourself.*

Weeds are best targeted when they are immature.

Toxic Weeds

- Largest economical loss due to weeds is animal deaths.
- Scout your pastures, ask your extension agent for help.
- Pasture management/grazing management is the best prevention!
- Understand proper herbicide application for the species you want to kill.

- ***Take a poster!***

Toxic Weeds



Creeping Indigo: GrazonNext HL



Showy Crotalaria "rattlebox":
GrazonNext HL, Pastureguard,
Glyphosate

Toxic Weeds



Nightshade: GrazonNext HL,
Glyphosate, Milestone...



Lantana: Dig it up, Glyphosate

Toxic Weeds



Sicklepod: 2, 4-D, GrazonNext HL,
Glyphosate



Castor Bean: Glyphosate

Cool Season Forages

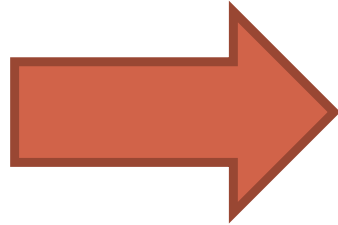
- **Annual Ryegrass** is a great option:
 - Broadcast or drill
 - Productive
 - Quality forage (Jan- March)
- **Oat**
- **Clovers**

- Secondary Benefits to a cool-season forage:
 - Maintain root structure
 - Recycle nutrients
 - If utilizing a legume (clover) potential to add Nitrogen to the system.
 - Green pasture in the winter



In summary

- ***Be a soil enthusiast, then a grass farmer, then a horse farmer.***





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