

HORSE MANURE: MANURE MANAGEMENT AND MORE...

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Who am I?

What do I do?

And...

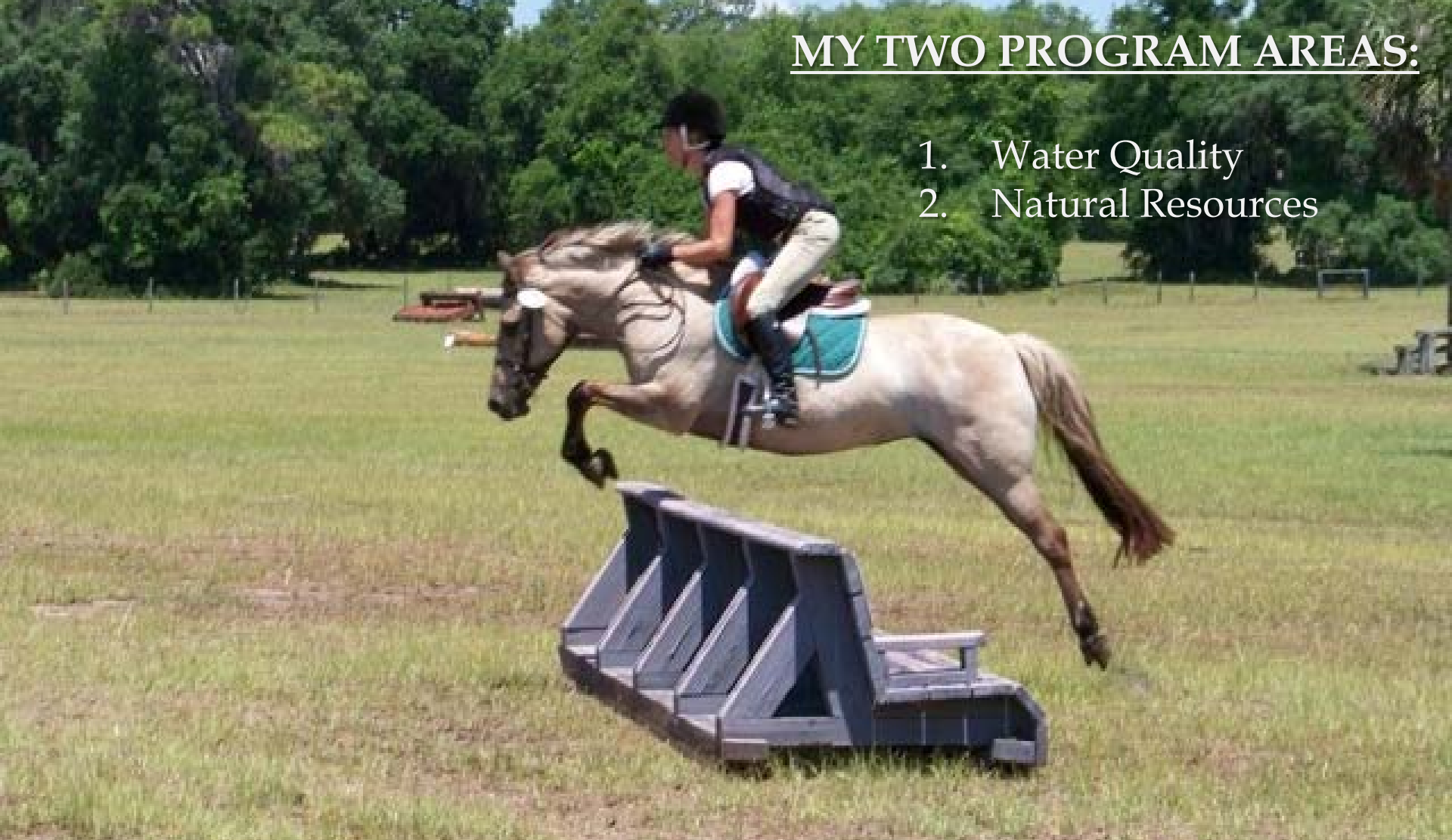
What's the big deal
with horse manure?

Farm Outreach Coordinator

Marion County Extension Agent

MY TWO PROGRAM AREAS:

1. Water Quality
2. Natural Resources



Because Marion County is “Horse Capital of the World” ...



Water quality = horse manure/urine issues

**Nitrogen
is the problem here**

In south Florida, the issue is Phosphorous

My explanation of this program is this:

“I’m not the person who gets you into trouble,
I’m the person who helps keep you out of trouble.”

University of Florida/IFAS

Educational only

NOT regulatory in any fashion

Marion County works well with this program, so I am able to give farms the help they need IN A NON-REGULATORY MANNER.

OFTEN TIMES MISTAKES ARE MADE ONLY FROM LACK OF
EDUCATION

So, concerning water quality/manure,
I give presentations and talks to...

- Equine Breed Associations and Clubs
- Government Bodies (within the whole state)
- Equine Housing Associations
- Extension programs
- And other classes, like yours

On composting, BMPs, legislation, etc.,

I also “table” at horse shows,
when appropriate

WHAT ELSE MY PROGRAM OFFERS TO FARMS

Non-regulatory farm evaluations of:

1. Current manure management practices
2. Farm layout
3. Current fertilization practices
4. Trouble spots

Farm Improvement Services offered:

1. Pasture/stocking rate assistance
2. Free soil testing kits
3. Help setting up or improving composting systems
4. Always working on manure to energy stuff
5. And more...

Building and Construction advice:

1. To avoid future/additional erosion and run-off problems

HAVE A QUESTION – ASK ME...

But...I largely teach
Best Management Practices (BMPs)
to farms,
explaining the benefits
and how using them can help a farm:

- **Save time.**
- **Save money.**
- **Keep ahead of legislation.**
- **Be good for the environment-water and land!**

WHAT ARE BMP'S?



**Common sense and science-based.
Practical and economically feasible.
-Used in many different industries**

GOAL: to help protect and preserve our springs and aquifer

Perhaps a bit of review about the manure (and urine) on farms:

- ▣ **Manure and urine contain nitrogen –**
- ▣ **Excess amounts can potentially leach into our springs and aquifer**
 - **This leaching can harm fish and aquatic wildlife**
 - **It can also make the water undrinkable for all**
 - **Current legislation for farms, in the state and local**
 - ▣ **Mostly concerning manure stockpiling and fertilization**



Some interesting statistics
about horses and people
in

Marion County and Florida...

SPEEDING CAN WRECK YOUR DAY

IN FLORIDA:

18+ million people
(4th largest state in US)
500,000+ horses

IN MARION COUNTY:

330,000+ people
50,000+ horses
And that is just horses!



But, consider this:

**A 1000 lb. horse excretes
45 to 50 pounds
of manure
*EVERY DAY!***



You do the math:

**500,000 horses
X 50lbs./day**

=

LOTS OF MANURE!

Which also means
lots of nitrogen going
into the ground/water



SO, WHAT IS TO BE DONE WITH ALL THE MANURE?

I TEACH FARMS TO CONSIDER:

What is desirable, necessary and optimal
for a farm's manure management
AND good for the environment

vs.

What is practical and economically feasible.

Things a facility needs to know:

1. **What is/will be function/size of this farm?**
 - Is this farm a business or for personal use?
 - Will a track need to be developed?
 - Will it need a riding ring-covered or uncovered?
 - Where will manure/composting/dumpster go?
2. **What is the operating budget for developing this property?**
3. **How many animals do you envision as the high number?**
4. **What about the surrounding properties?**

Manure Handling Options To Consider





**Stockpiling is
Really no longer a viable option**

On-site Composting



Composting for a small farm

A tarp
for covering manure

An easy and inexpensive set-up



**Another ideal small farm
composting set-up**

Roofed or covered with a tarp is preferable





Plexiglas hinged roof

This system cost
under \$300.00 to
construct!

Air tube for additional
air infusion into the
composting material

Removable slats:
Make it easier to use

This is a good set-up

STATIC AIR COMPOSTING PILES



Placed on concrete to avoid leaching

Composting for a medium-sized facility



Composted manure
(used on farm)

Manure to be hauled away



SUSTAINABLE AGRICULTURE:

The manure from this farm is used to help
maintain the pastures

Large scale composting

**Finished product of
HORSE MANURE/BEDDING**
(This is used on the farm's crops)

AGAIN, SUSTAINABLE FARMING



Just starting





Fully Composted manure,
now "curing"

Partially composted manure

**Another example of
windrow composting:**
More sustainable farming

And still more composting ideas...



A rotary composter
Anaerobic Digestion



DUMPSTERS TO CONTAIN THE MANURE:

**Often times, these are hauled to commercial
compost outfits**



Spreading manure
on the land can also be
acceptable

SPREADING



**I teach farms to determine if there is enough
acreage and to
check with local codes**

If a horse deposits 45 lb/day:

Then if dry matter = 20.5% (about 80% is water)

1.23% Nitrogen

0.047% Phosphate

0.093% Pot Ash

Compare with a cow:

3.94% Nitrogen

1.6% P_2O_5

3.1% K_2O

These numbers are what a farm uses ,
or what a farm should use,
to consider land application rates, etc

FOR THE FARM:

**Total acreage needs to be
determined**

And...

How the total acreage will be used.

REMEMBER:

A HORSE GENERATES 50lbs OF MANURE EVERY DAY:

**WHAT WILL BE DONE WITH IT ALL AND
If you spread it, WHERE WILL IT GO?**

- **Land-applying composted manure is ideal:**
- **It's a terrific soil amendment (great in Florida)**
- **It can also be a good slow-release fertilizer**



BUT...spreading fresh manure can still be ok

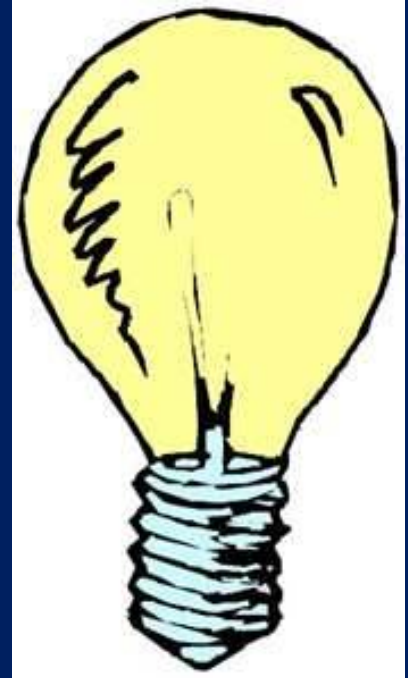
HOWEVER...
LAND APPLICATION LAWS
ARE CHANGING:

Ex. Wellington, FL no longer allows the spreading of manure which has not been previously composted

And in other states:

**Like Pennsylvania,
EACH farm MUST HAVE a
Nutrient Management Plan
to address things like land application**

What about manure to energy?



GoldMark: *A farm using gasification*



The goal is for the farm's manure to generate all the electrical needs for the farm

Manure is first loaded into gasifier



The briquette machine:

It dries the manure, then it's burned at VERY high temps in the gasifier, thus generating electricity



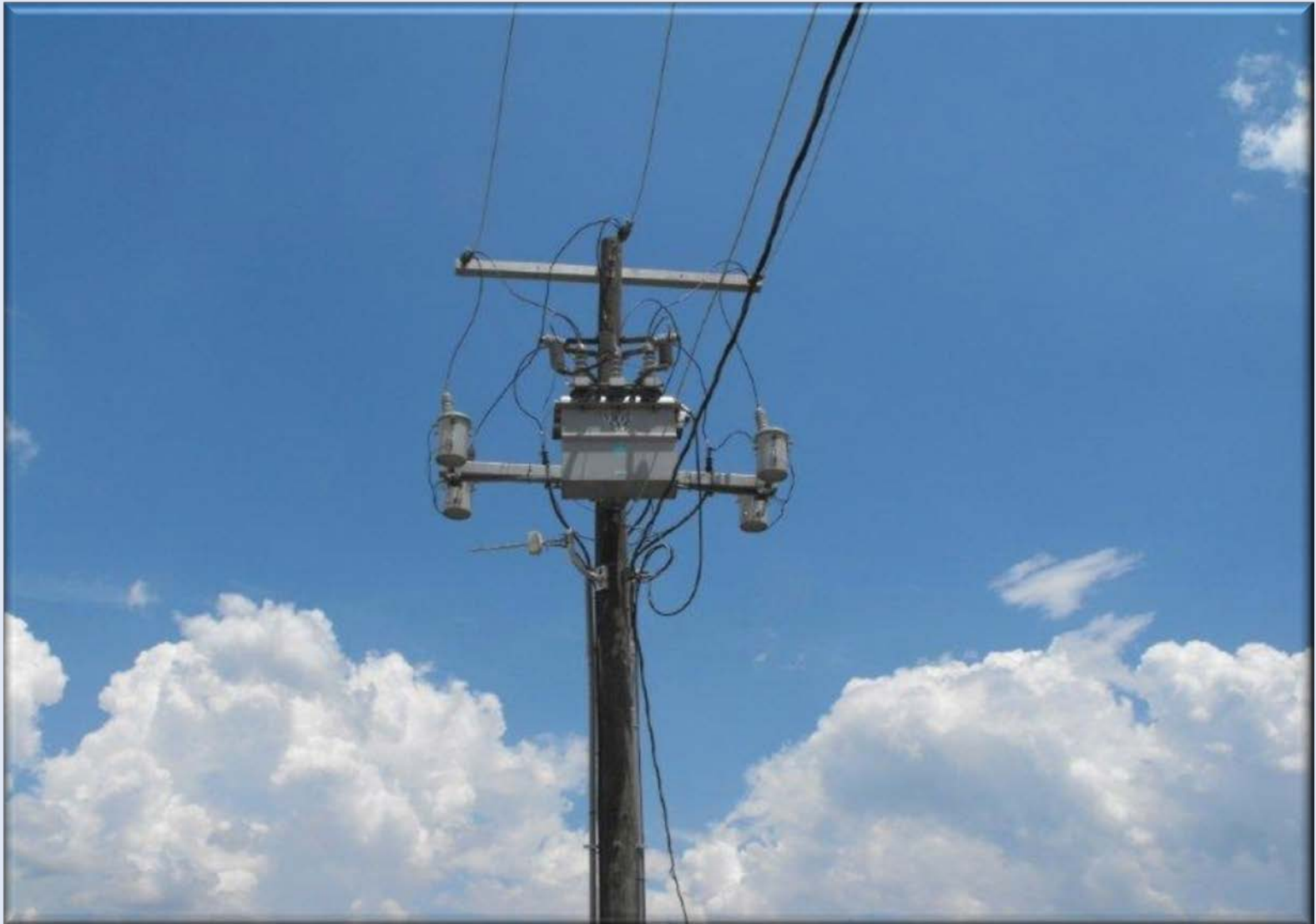
ANAEROBIC DIGESTION at Suwannee Farms



A horse-cow manure mixture used here



LAST YEAR: This facility was
“off the grid” for 6 months



Consider
current legislation

County and state legislating offices

FDACS- state level:

Safeguard the public and support Florida's agriculture economy

FDEP-state level

Lead agency for environmental management and stewardship

Marion County Board of County Commissioners:

Oversee public offices and provides resourceful services

Marion County's Springs Protection Ordinance

Adopted in 2009

- Intent is to protect the quality of the Floridian Aquifer underlying all of Marion County, done through regulating uses and activities which can adversely impact the quality and quantity of groundwater.
- Covers things like landscaping, fertilization, waste management of new development, etc...
- There are three pages in the S.P. Ordinance pertaining to BMPs for horse farms
- Regulates:
 - Manure piles, piling and dumping
 - Fertilization of pastures
 - See hand outs, reprinted from the Ordinance

Additional state/federal legislation for facilities housing over 500 animals – CAFOs-Concentrated Animal Feeding Operation

FDACS State BMP Manual:

**The benefit of signing up
with the manual:**

**IT'S FOR
THE EQUINE INDUSTRY**
As a whole

Who can participate in FDACS BMP Manual?

Commercial Horse Farms

- Lands Classified as Agriculture
 - IRS Form 1040, Schedule F

NOT ELIGIBLE:

Small hobby operations

Race tracks

Large horse shows regulated by FDEP permit

**And
if you are interested
in learning more
about the manual...
A link of my Manure
Management Summit
is online at:**

“Green Farm Practices”

www.marioncountyfl.org/CountyExtension



Or, you can email me at: jamiecohen@ufl.edu



FYI: Here are some interesting links for you...

GOVERNMENT WEB SITES

FDACS – www.freshfromflorida.com
Help with BMP manual

Office of Agriculture Water Policy
– www.floridaagwaterpolicy.com

FDEP – www.dep.state.fl.us
Info on legislation/enforcement

NRCS – www.fl.nrcs.usda.gov
Conservation assistance, cost-share

Marion County –
www.marioncountyfl.org
Local government information

COMPOSTING INFORMATION

eXtension.org – Manure Management page
www.extension.org/pages/25674/horse-manure-management

Composting Horse Manure
[http://edis.ifas.ufl.edu/BODY AN040](http://edis.ifas.ufl.edu/BODY_AN040)

A Guide to Composting Horse Manure
www.whatcom.wsu.edu/ag/compost/horsecompost.htm

UF/IFAS Online Composting
www.sarasota.ifas.ufl.edu/compost-info

In Summary...

**Manure will continue to be an issue
In the future.**

**But it is a “waste” product that
needs to be thought of
as an opportunity...**

**In terms of being a terrific soil amendment,
A slow release fertilizer and...
FOR HELP WITH
OUR FUTURE ENERGY NEEDS!**



ANY QUESTIONS?