

Thursday, July 14, 2011  
**NE 1041**  
Environmental Impacts of Equine Operations Annual Meeting  
Host Location: LSU Ag Center

Proceedings on July 14, 2011  
LSU Ag Center, Hammond Research Center, Hammond, LA

**In attendance:**

Betsy Greene (UVM)  
Krishona Martinson (UMN)  
Carey Williams (Rutgers)  
Michael Westendorf (Rutgers)  
Brian LeBlanc (LSU)  
Neely Heidorn (LSU)  
Laura Gladney (Rutgers)  
Masoud Hashimi (UMass)

**On Call:**

Ann Swinker (Penn State)  
Amy Burk (UMD)

**Welcome**

Dr. Bobby Fletcher, Director, welcomed us to the Hammond Ag Center and gave a brief background- it used to be a vegetable research station but is now in ornamental research. He commented that there are many horses in this area, partly due to the racing industry as there are several tracks in and near New Orleans. He then discussed the funding situation for LSU and how they are trying to improve county funding to continue working.

**Mike Westendorf, Introduction**

- Discussed goals of the project
- List of participants on website:  
<http://nimss.umd.edu>  
Want to reach out to some other people
- 5 Objectives of the Project:
  1. Better quantify feeding, management, and stored manure characteristics on horse farms in order to determine effects on soil, water, and air
  2. Evaluate existing data and conduct research to better quantify environmental impacts soil related to equine operations.
  3. Evaluate existing data and conduct research to better quantify environmental impacts on water quality measures related to equine operations.
  4. Evaluate existing data and conduct research to better quantify environmental impacts on air quality related to equine operations.
  5. Integrate knowledge gained from the data into a system model to help improve best management practices on equine operations.
- What do we hope to accomplish?
  - Describe project
  - Envision our roles
  - Direct or redirect project objectives?

- Consolidate teams
- Outline for reviews, begin writing, timeline
- Discuss follow-up and funding opportunities
- Some Lit Reviews coming along- 3
- Need to be thinking about final reports to get funding again
  - Fact sheets, peer-reviewed articles, eXtension

## **State Reports**

### *Mike Westendorf, Rutgers University*

- Protection of Environmental Resources Through Implementation of Feed Management Best Management Practices on Equine Farms
  - Diet modification practices
  - Methodology for NRCS to implement 592 practice in NJ through EQIP
  - Addressing excess nutrient intake, obese horses, pasture and manure management
  - Ann Swinker evaluated average rations of farms and found owners fed 200% required P based on NRC guidelines
    - He is using feed bag tag values and pasture/hay analysis
- Dietary and Nutrient Management Practices on Livestock Farms: A Survey
  - Surveyed 700 producers through NJ NASS, 240 returned
  - \*\*\*Discussion\*\*\* Need to differentiate between total farm acres and utilized pasture acres. We should come up with a master survey for our region. Betsy will lead and create a Google document for all to post their state's surveys with the goal of creating a master. Could be a quick publication, maybe NAMS support? Use one survey (possibly online) and all responses would go to one central database.
  - NJ survey looked at farm demographics, farm management practices
  - Use of nutrition consultant question: could be skewed by sending survey to an Extension mailing list
- Bedding study
  - Monitored behavior by videotape
  - Used generic names for Struefex and Woody Pet
  - Looked at compost quality of 4 different bedding materials (wood shavings, wood pellet, straw, straw pellet)
    - Struefex has 60% volume reduction

### *Laura Gladney, Rutgers University*

- Protection of Environmental Resources Through Implementation of Feed Management Best Management Practices on Equine Farms
  - Use 21 farms in 2 NJ watersheds to evaluate feed management practices and give recommendations to improve
  - Screening survey to select ~10 farms per watershed
  - Nutrition Consults: feeding questionnaire, weight tape and body condition score each horse, provide Nutrition Recommendations based on visit
  - Pasture Evaluations: Collect soil/forage/hay samples, conduct visual assessment of pastures, provide Pasture Report with recommendations based on visit and sample results

- Average soil test P was 280 lbs/acre
- Manure samples: representative of what would be spread on pastures
- On-Farm Demonstrations: Two Pasture Walk meetings held; one in each watershed

Amy Burk, University of Maryland

- Last year was her student's study
- Just submitted mailed survey study and field study (52 farms) to JOE
- Rotational Grazing Site
  - 4 Pasture Walks and 1 Seminar per year
- Writing publications for horse farm owners on pasture management
- Apply for CIG grant
- Follow up surveys on pasture programs
  - Not putting in heavy use pads- too expensive
- \*\*\*Discussion\*\*\* Consider applying for a national CIG grant?
  - NIFA doesn't like to fund equine-specific grants

Krishona Martinson, University of Minnesota

- Grazing Trial: 12 Cool Seasonal Varieties
  - Look at plant persistence; will they stand up to horses?
  - Plots grazed for 6 months
  - Used acclimation area. Perennial ryegrass was used as a nurse crop, but with good snow cover it has persisted for 2 years.
  - Data collected before and after grazing periods
  - Horse preference: % visual removal, mow after
  - Results:
    - Timothy, bluegrass and Quackgrass most preferred
    - Reed canary: 60% removal
    - Meadow brome: not preferred, 30% removal, different from smooth brome
  - Timothy had worst persistence
  - Try to plant mixtures for success- don't use timothy
- Round Bale Feeder Trial
  - Tested 9 different feeders
  - Cost ranged from \$147 - \$3200
  - Wasted 57% of hay without feeder
  - No differences in estimated hay intake
  - Differences in pen weight change among feeders and the control- could have been decreased gut fill with shortage of forage in the control
    - Big weight loss with no feeder- made a mess of bale and had almost nothing left by last day of trial
- Pasture Evaluation Program
  - Fee-based pasture management program
  - Costs producer \$650 for 2 site visits, customized reports based on owner goals
  - 20 farms signed up!
  - Mean farm size: 30 acres, 10 for pasture; mostly hobby farms
  - Many had sensitive water features, lots of weeds
  - Need more of these programs

Carey Williams, Rutgers University

- Dietary Protein Affects Nitrogen and Ammonia Excretion in Horses
  - Study effects of overfeeding protein @ 150%
  - Look at urine, feces, blood, and air quality of stalls on horses on different protein diets
  - 12 Standardbred mares on high (11.6%) and low (8.4%) protein diets
    - Adapted to diet for 2 weeks
    - Fecal collections for 5 days, analyzed N, NH<sub>3</sub>, Organic N
    - Washout and crossover
    - Blood and urine taken before and after diet adaptation
    - Air quality: Drager ammonia tubes on halters for 8 hours and pump in exact center of stall took sample once after 8-hour period
  - High protein diet had higher N and NH<sub>3</sub> in manure
  - Urine: varied between Trial 1 and 2
    - Ambient temperature may affect this
    - Mares could have been in estrous to affect results
  - Blood: varied by Treatment and Trial
  - Air: 8-hour halter tubes increased, pump did not
  - Future: possibly look at high protein diets and supplements
    - Also look at Water Extractable Phosphorus in manure

Betsy Greene, University of Vermont

- Workshops and Pasture Walks
- Greener Pastures- high traffic area
- SARE grant
  - Measuring water quality at renovated and non-renovated pastures
  - How to get horse people to adopt pasture BMPs?
    - Selling Grazing System pamphlets, need more funding
  - How to appeal to horse people

Friday, July 15, 2011

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Betsy Greene, update from Thursday:

- Google document is up, every please add surveys to it.
- Who originated survey questions? MDA, looked at Rutgers
- Environmental Impact Assessment

**Ann Swinker, Pennsylvania State University**

- Chesapeake Bay grant is over
- SARE Grant
  - Working with 25 farms with less than 60% pasture cover, helping them reseed
  - Farm visits, pasture frisbee
  - Will have a 4-day, 12-hour session; need 200 people to attend
  - Will reach 2,000 people with educational program at Ag Progress Days and World Horse Expo
- Invited to Southern States Nutrition Conference
  - Comparing states' regulations (CAFO)
  - Also gave info at MANC
- EPA- equine impact on Chesapeake Bay
  - Farm Bureau suing over Chesapeake Bay deal
  - Claims they are swaying from science in regulation
  - DEP is going to visit every livestock farm in PA in next 5 years
- Surveys- make sure it's not too long
- Advisory committee , EPA and DEP collecting Chesapeake Bay info; curious if farms had manure plans of have even heard of them

**Masoud Hashimi, University of Massachusetts**

- Not much going on in Mass with horses, mostly Extension
- 319 Grant- Education and Demonstration, some fact sheets
- New grant with more structural and implementation components
- Two pilot farms
  - One at UMass, 45 horses, near water bodies but nothing is being done with it for now
  - Sanctuary Farm- rescue for 40+draft and slaughter-bound horses. Interested people collect the horses and care for them. 3 rivers. Only 12 acres (including barns). No university connection except for recommendations provided.
    - Make sacrifice area
    - Bedding types

- Treat manure- biochar, pelletized manure
- Educational workshops across the state: feed/manure/pasture management, etc
- Most farms don't qualify for EQIP, so UMass helping them with nutrient management
- Will share 2-hour farm survey

Brian LeBlanc, Louisiana State University

- Handed out Equine Water Quality Education Series fact sheets
  - Each one is accompanied by a Powerpoint, not online
  - These are handed out at horse shows and events

**Future Goals**

1) *Survey- Google docs*

PSU, UMD, Rutgers, Mass  
 Explanations of questions  
 \*Betsy Greene (UVM)

2) *Live Meeting / Remote connections*

Every other month  
 Issue areas  
 Lit Reviews  
 \*Laura Gladney (Rutgers): Doodle Poll

3) *Lit Reviews- follow up*

\*Keep reviewing drafts, keep momentum!  
 \*Laura Gladney (Rutgers)

4) *Projects and Grants*

Pasture Management and Environment- National CIG? Look more at BMPs.  
 "Small Livestock" or "Small Farms in Sensitive Areas" or "Urban Fringe"  
 10 states: NJ, PA, MD, MA, LA, MN, VT, TN, SD, NC, (FL?)  
 \*Laura Gladney (Rutgers): find out National CIG guidelines, deadlines, RFP (Christmas time)  
*2012 RFP not out yet; 2011 RFP:*  
[http://www.nrcs.usda.gov/technical/cig/pdf\\_files/CIG\\_FY\\_2011\\_Announcement\\_for\\_Program\\_Funding.pdf](http://www.nrcs.usda.gov/technical/cig/pdf_files/CIG_FY_2011_Announcement_for_Program_Funding.pdf) Pre-proposal was due Dec 28, 2010  
 Survey / GIS; link to watershed data  
 Look into state EPA 319

5) *Demonstration Farms*

\*Mike Westendorf (Rutgers)

6) *BMP Review*

\*Brian LeBlanc and Ron Sheffield (LSU)

7) *Rotational Grazing?*

Grazing Selection  
 \*Krishona Martinson (UMN), Carey Williams (Rutgers), Amy Burk (UMD)

8) *Pasture Renovation*

\*Ann Swinker (Penn State), Laura Gladney (Rutgers) – CIG

9) *Model Horse Producer*

Look at Betsy Greene's Farm Bureau pilot program

Chesapeake Bay-Friendly Model Horse Farm, Virginia:

[http://www.pswcd.org/images/HRS\\_Final\\_repor\\_%20KN.pdf](http://www.pswcd.org/images/HRS_Final_repor_%20KN.pdf)

10) *Water Extractable P* – Mike Westendorf (Rutgers)

11) *Energy (pelletized horse manure)* – NIFA priority

CIG grant to install anaerobic digester on NJ horse farm

\*Mike Westendorf (Rutgers)

12) *Disposal*

Regional compost centers

13) *Publications / Products*

\*Compile states – Mike Westendorf (Rutgers)

Regional guides

Materials Website

Step by step guide for how to do surveys, certain types of research, etc for different regions

Fact sheets/PPTs

Action Items (for next conference call):

1) Web Call- August (between 12 and 20), every other month after

2) Survey- Google Docs- Betsy Greene

3) National CIG- Laura Gladney, find RFP and report in Aug

4) Lit Reviews Follow Up

Next year's Location

Vermont- August 8-10 or 13-15 (MTW)

Doodle Poll