

Thursday, August 14, 2014

NE 1441

Environmental Impacts of Equine Operations Annual Meeting

Host Location: South Dakota State University

SDSU Animal Science Building, Brookings, SD

In attendance:

Betsy Greene (UVM)
Carey Williams (Rutgers)
Michael Westendorf (Rutgers)
Laura Kenny (Rutgers)
Ann Swinker (PSU)
Rebecca Bott (SDSU)
Krishona Martinson (UMN)
Rebecca Splan (VT)
Bridgett McIntosh (VT)
Sarah Tanner (SDSU)

On Call:

Carissa Wickens (FL)
Paul Siciliano (NCSU)

Mike Westendorf, Introduction

State Reports

Laura Kenny, Rutgers University

- Effects of Rotational Vs Continuous Grazing Systems for Horses on Environmental Quality, Animal Health, and Production Cost
 - 15 acres, 12 horses
 - 2 rotational, 2 continuous systems of same size
 - Vegetative measures- monthly
 - Vegetative Cover/Species Composition, Modified Step-Point Method
 - Available Herbage Mass (kg DM/ha), ½ meter by ½ meter square clippings
 - Sward Height, Meter stick and Styrofoam plate
 - Forage Nutritional Value, Samples sent to Equi-Analytical
 - Soil Measures
 - Soil Fertility, yearly, Samples sent to Rutgers Soil Testing Lab
 - Water Infiltration, 3x per year, 20-cm Tension Infiltrometer
 - Bulk Density, 3x per year, Automated Three-Dimensional Laser Scanning
 - Horse Health measures
 - Body Condition Score, monthly, Henneke Scale
 - Body Weight, monthly, Livestock Scale
 - Body Fat Percentage, monthly, Subcutaneous ultrasound
 - Voluntary Movement, every other month, Garmin GPS Dog Trackers
 - Production Cost
 - Factor in costs of extra feed when forage is inadequate
 - Costs of pasture maintenance

Krishona Martinson, University of Minnesota

- Hay Trials comparing feeders
 - Basket feeder, hayrack with bunk, slat feeder, and no feeder control
 - 2 days acclimation
 - Fed 2.5% herd BW of good quality grass hay
 - Waste was lowest in slat feeder, then basket, hayrack, control
 - Hay intake was highest for basket and hayrack
 - BW decreased with slat and no feeder
 - Payback was less than a year for all feeders
- Dry Lot Weeds
 - Prostrate knotweed tested very high in NSC, could be a problem for laminitic horses on weedy drylots
 - 10 horse farms in MN and WI
 - Fields with prostrate knotweed, cinquefoil, plantain, ragweed, etc.
 - Broadleaf plantain had highest average NSC at 16% with a max of 30%
- Grazing Annual Cool Season Grasses
 - Weather created need for emergency grazing crops
 - Wheat, barley, oats
 - Ready to graze 30 days after planting
 - Compared grazing before boot stage and at more mature stage
 - Oat had highest yield, wheat lowest
 - Rye highest NSC at 18%
 - Percent removal was highest in winter wheat at 93%, lowest in oat at 22%
- Legume Grass Grazing Trial
 - KY bluegrass, meadow fescue, orchardgrass
 - Combined with alfalfa or birdsfoot trefoil or white clover
 - Also grazing pure alfalfa, pure red clover, and pure white clover
- Annual Warm Season Grass Grazing Trial
 - Millets, sorghum sudan, teff, ryegrasses and oats
 - Risk of nitrate problems from drought and mechanical crushing
 - Grazing for 1 week, 4 hours per day and fed hay in the evening
- Proposed Turfgrass Grazing Trial
 - KY bluegrass, rye, fescue, others
 - Yield, preference, quality, persistence
 - Potential collaboration with RU- strong turf program
 - Look at endophytes as well
- Equine Pasture Management Program
 - 12 farms in 2013, lost assistant
 - 5 farms in 2014
 - \$650/farm, 1 visit

Ann Swinker, Pennsylvania State University

- See written report by Donna Foulk
- Equine Environmental Stewardship Short Course
- Development of Equine Pasture Evaluation Disc to Document Pasture Quality
- Adoption of Best Management Practices (SARE grant)
- Documenting Pasture and Nutrient Management Systems on Equine Operations

- Pasture Renovation Using a No-Till Drill
- Environmentally Friendly Farm Program
- Writing Manure Management Plans
- Horse Health and Well-Being- Parasite Course and Hidden Hazards to Equine Health course

Rebecca Bott, South Dakota State University

- Compost project in Stable Management and Animal Waste Management Classes
- Hands on composting decisions by students
- Students kept logs
- Students in Animal Waste Management seemed to get more out of the project

Carissa Wickens, University of Florida

- BMP for beef industry and equine operations
- Ranch Forum for beef/horse people
 - Manure management BMPs
 - Manurepalooza 2014
- O2 composting for stall waste, land application
- Air quality in equine facilities, methods to mitigate ammonia
 - Grad student working on emissions
 - Partnering with UDel
- Behavior and Welfare
 - Impact of ammonia, responses to different concentrations
- Dietary impact of P excretion with Laurie Warren

Paul Siciliano, North Carolina State University

- Effect of sward height on grazing preference and NSC
 - 4 cells containing short, medium, long grass ranging from 5-12"
 - 30 days
 - Horses graze whichever patch they want
 - Grazed 55% of time in 12", 35% in 8", remainder in 5" patches over 1 hour
 - NSC content: Short 20%, Medium 25%, Long 30% (more leaf area)
 - Mowed regularly
- 4 one-acre grazing cells, 2 horses each
 - 2 cells- free graze 21 days
 - 2 cells- divide in thirds and rotate
 - Look for uniform grazing, uniform manure distribution

Betsy Greene, University of Vermont

- Working on public education- new regs for any farm with 1 or more horses
- Challenge is getting horse people to act

Bridgett McIntosh, currently Virginia Tech but presented work from the University of Tennessee where she was previously employed

- Survey work for background data
 - 3 on-farm sites to improve water quality and install BMPs
 - 319 Water Quality grant

- Not getting professionals at educational meetings, want smaller farms to look up to big professional farms
- Bermudagrass- can graze in 40 days and beat it up
 - Rotational Vs Continuous
 - Look at nutrient content, yield, botanical composition, method
- Composting and Parasite Loads

NE-1441 5 Year Plan

2015 Meeting: North Carolina, Paul Siciliano will host
Week of August 17?

2016 Meeting: MARE Center, Virginia Tech

Other Business- Collaborative Projects

- Reviewed new objectives on the new project and assigned leadership
 - Objective 1 (Pasture and Grazing Management): Carey Williams
 - Objective 2 (Manure Storage): Mike Westendorf
 - Objective 3 (Feeding Management Effects on Manure Characteristics): Bridgett McIntosh
 - Objective 4 (Stable and Housing Facilities, Air Quality): Ann Swinker and Betsy Greene
 - Objective 5 (Other BMPs): Krishona Martinson
 - Objective 6 (Determine Impact of Programs, BMP Adoption): Rebecca Bott and Rebecca Splan
- Papers
 - New- Pasture Methods (30% done) (JEVS, JAS)
 - State Regulations (10% done) (J of NAEAA)
 - Manure Composting/Storage (75% done) (JEVS)
 - Standardized BMP Survey (70% done) (JOE Tools of Trade, JOE)
 - Summary of Survey Responses (0% done) (JOE, JEVS)
 - Nitrogen paper (90% done)
- Environmental Stewardship Awards discussion
 - List winners on websites with pictures of farm
 - Train realtors
- Various discussion on regional trade shows, stocking rate, new leadership of this project
 - Writing of minutes should fall on the host institution
- Nitrogen paper discussion
 - Focus on precision feeding
 - How to tie paper together
 - Organize in a ground to ground cycle
 - Make more environmental focus
 - Sarah has a figure we could use
 - Krishona working on some paragraphs, will send to Betsy and Becky for more work
- NIFA HEC Proposal
 - Still no word
 - If we do not get it, resubmit to Morris? NSF? SARE?
 - Ann Macrena at PSU is still interested

Final Report

- Each station needs 3-5 page paper on what you've done over the last 5 years
 - Organized by study
 - Relate back to original 5-year plan
- Include publications, grants, abstracts, synopses
- Use your CRISS reports
- Deadline: October

Thursday, August 15, 2013

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Michael Westendorf (Rutgers)
Laura Kenny (Rutgers)
Ann Swinker (PSU)
Rebecca Bott (SDSU)
Krishona Martinson (UMN)
Rebecca Splan (VT)
Bridgett McIntosh (VT)
Sarah Tanner (SDSU)
Erin Cortus (SDSU)

On Call:

Waste to Worth Conference

- Discussion led by Erin
 - 2nd annual conference/symposium
 - Technical sessions and tour day
 - Organized by Livestock and Poultry Environmental Learning Center COP on eXtension, they publish proceedings
 - Abstracts for talks are due Sep 15
 - 1-2 page paper due mid-Jan. Not peer reviewed, Extension-type document
 - Look at 2013 proceedings for examples
 - Horse session has been filled in: AM pasture and PM BMPs
 - Audience: NRCS, Extension mostly
 - Hold a focus group/discussion session with NRCS, possibly replace Carey's CIG talk
 - Promote in local area to producers, see if they can get a lower 1 day rate
 - Mollie Bogardus
 - Travel scholarships are offered if you don't have travel money
 - Mike Westendorf is also organizing Small Farms section
 - Posters- CIG, Paul, Ann
 - Posters are all done together, no separation of topics
 - More equine posters
 - Mike will send email with tasks and deadlines

Final Report

- Outline
- Follow objectives and tasks under each
- Mike will get example report from other projects
- Due in October
- List papers
- Use old CRIS reports
- We haven't touched some tasks
- See if Dan Gimenez or Stephanie Murphy did a CRISS report on soil work
- All minutes are on website
- Use justification for next 5 years

- Ideas:
 - Steve Komar's composting work
 - Webinars- Ann, Carey
 - Get work from vita
 - Electronic/Facebook material
- Recruit new people?
 - SDSU
 - Matt Spindler from VT