**NE1441 meeting minutes**

**8/31/17**

**Attendees**

Bridgett McIntosh, Amy Burk, Aubrey Jaqueth, Carissa Wickens, Donna Foulk, Heather Stofanak, Krishona Martinson, Laura Kenny, Mike Westendorf, Robert Causey, Mark Rieger, Jennifer Weinert

**Introduction**

* Everyone needs to send Mike your state reports and publications from the previous year that are related to the grant.
* Also will need to have a rewrite for the next five years by the end of 2018. Will also need someone to take charge. Mike will be retiring in the next 5 years.

**Amy Burk and Aubrey Jaqueth (U of MD)**

* Rotational grazing on hiatus due to lack of collaborators and interest from stakeholders
* Aubrey’s research from her final year of her PhD
	+ Novel trufgrass for the fat pony
	+ Paper in “The Horse” and in process of writing the manuscript
	+ Used 3 cool season, 1 warm season each year for 3 years
	+ Tested wear tolerance and sugar content
	+ Preliminary results showed tall fescue and zoysia grass most tolerant
	+ Palatability trial not determined yet, but lots of crab and goose grass grew due to lots of rain this year
	+ Have to be careful of herbicide usage, some for turf but not pasture
	+ No negative health impacts on horses
	+ Zoysia and creeping bentgrass very hard to establish and use
* Amy’s other student’s study
	+ Were not able to test the grass using ponies, but looking at using mini’s
	+ Renovating the turf creeping bentgrass and try again next year
	+ Creeping bentgrass was not eaten
	+ Now looking at horses grazing with grazing muzzles on individual and herd grazing behaviors
	+ Starting this fall and next spring

**Mark Rieger (Administrative Advisor from UDEL)**

* Small grants to get started
	+ Planning grants – Northeast Experiment Station Directors
		- Put money in a pot and entertain proposals to get people together to fun projects and get larger resources
		- NERA and NEED and joint proposal
		- Research and extension
		- We had submitted one and didn’t get funded to get the group together to rewrite another grant to make online resources for Environmental BMPs
	+ Think about in the future to apply for an award for multistate groups
		- Find out about them by contacting Mark Rieger for more information

**Carissa Wickens (U of FL)**

* New masters student will look at on farm manure management BMPs both composting and stockpiling
	+ 2 years of funding from Spring Watershed
	+ Applied on farm and education
	+ Horse owner to horse owner demonstrations really go a long way – network learning
	+ 3 farms – TB training center (large farm), multi property community (equine community) ranchettes (4-6 horses), Small farm with an unmanaged pile
	+ Making their own lycmeters looking at ground and runoff water
* Hired a new agronomy specialist plus new PhD student
	+ Grass and legume mix pasture systems horse performance, forage yield, quality and N inputs
	+ Need to look at other forage varieties due to health concerns with native grasses in FL
* Extension programming
	+ Lots of BMP programming, small farms really need it!
	+ Education is key!

**Krishona Martinson (UMN)**

* Horses grazing Teff, Alfalfa and Perennial Ryegrass
	+ Teff doesn’t get planted until first week of June in MN so no spring samples
	+ Alfalfa doesn’t make it into Nov. so no late fall samples
	+ Look at Glucose and Insulin response
		- Seasons = spring, summer, fall and late fall
		- Fast and did sugar challenge prior to grazing, no IR horses
		- Grazed from 8-4 pm
		- Blood samples at 2, 4, 6, 8 hr times
		- Teff is lower in NSC (about 8%), even cool season grasses are about 12% so not overly high
		- Glucose responses not different
		- Insulin responses are lower for fasting, higher for cool season (got higher towards fall)
		- No values were higher than 80 uIU/mL
		- Teff horses had lower Insulin peaks
* USDA NIFA and other grants for alfalfa so good funding source for alfalfa grazing
	+ Want multi-state collaboration
* Ongoing projects
	+ Storage quality of round bales
	+ Multi species grazing in winter-hardy perennial ryegrass
	+ Horse preference of different colored oats (yellow vs white)
	+ Efficacy of goldfish on maintaining water quality in equine stock tanks
* Future projects
	+ Hay feeding height on dental wear patterns and chiropractic health in the adult horse (fall 2017)
	+ Low-lignin alfalfa digestibility (fall 2017)
* On line certificate courses
	+ Pasture management
	+ Horse hay
	+ Basic equine nutrition
	+ $75 each for 6 week semi self-paced on line course on Moodle
* Looked at online vs in class courses
	+ Learning gains in both
	+ Satisfaction high in both
	+ Based on these results on line are as successful as in class courses
	+ Published in Natural Sciences Education journal

**Laura Kenny (PSU)**

* Flagship course is Environmental Stewardship short course
	+ 15 hours of education with hands on experience
	+ 4 week nights or 2 full days
	+ Over 1000 people have attended this course
	+ Large knowledge increases and intent to make changes
	+ Topics covered include forage biology and grazing management, forage species, pasture evaluation, weed management, toxic plants, soils and fertility, manure risks and benefits, BMPs
* Horses 101 educational horse course for NRCS and department personnel
* Horse health series tick-borne diseases, equine metabolic syndrome
* Pasture walks in SE PA, focusing on hands on activities, soil testing, pasture evaluation, forage and weed ID, BMPs
* Pasture talks lecture topics
* Environmentally friendly farm program
	+ Farm self-assessment checklist
	+ Verified by farm visit
	+ Assistance provided to write plans, etc.
	+ Engage with Coop Extension, etc.

**Bridgett McIntosh (VT)**

* Conservation BMP Model Farm continuous vs rotational grazing (7 acres with 4 horses)
	+ People do not want to adopt these practices
	+ Not big differences between nutrient levels of grasses
	+ WSC is slightly higher in ROT fields
* Seasonal effects of grazing on metabolic and digestive responses in horses
	+ Weekly samples for 1 year AM and PM (8 am and 4 pm)
	+ 12 horses = 6 had laminitis in the past, 6 normal
	+ Monthly botanical composition
	+ Blood samples every Wed.
	+ BCS, CNS, BW, signs of laminitis, glucose insulin, lactate, TNFa, LPS
	+ Fecal: VFAs, Lactate, pH, Microbial characterization
	+ NSC by week increased but glucose by week is no change, insulin follows NSC
* Effects of diet and timing on intake
	+ Housed on dry lot with ad libitum hay
	+ Treatments = pelleted feed, extruded feed and hay only
	+ Used horse nappies, 3 25 d periods, microbiome samples as well as total collections, blood sampling to see if AM and PM meals differ
* Nutritional Management of Performance horses
	+ Survey of performance horse nutritional management in show hunter and jumpers
	+ 122 horses, surveyed at shows in NO VA
	+ Most fed concentrates, on pasture about 9 hours per day when home
	+ Most people were concerned about obesity (large warmblood population)
	+ Advice from trainer and veterinarian
* Body condition index score vs BCS
	+ Cannot compare scores, very different especially in long horses
	+ Totally different numbers
	+ Works better for short coupled horses
* Feed digestibility and timing of feeding
	+ Using DigestaWell® Buffer in fat horses
	+ Implications for using buffers in grazing horses?
* Native warm season grasses
	+ Big bluestem, little bluestem, eastern gama grass hay
	+ Highly productive and typically lower in NSC
	+ Enhance ecosystem
	+ Did not establish at MARE Center, so will have to buy hay
	+ Are they safe and digestible?
	+ Can they be grazed?
* Extension programs
	+ Healthy Land for Healthy Horses
		- About $20K from state funding, free program
		- 6 weeks, 50 people
		- At MARE Center and local farms
		- Lectures videoed to make it an online course
	+ Spotlight on Stewardship
		- Targeted this year toward real estate agents and new buyers
		- Agent, buyer and seller speaking along with Bridgett
		- Want to offer CE credits in the future

**Donna Foulk (PSU)**

* Parasite resistance project (SARE Grant)
	+ Changing minds one at a time
		- Manure removal and management
		- Pasture management
		- Horse density
		- Stability of horse population
		- Deworming program
		- Personal opinions
		- Horse age and health
		- Egg shedding
	+ Misconceptions of all worms are bad and all horses need to be dewormed
	+ Focus on small strongyles
	+ Huge change in parasite population with new dewormers
		- Large strongyles are rare
		- Small strangles are most common
	+ Some horses have natural immunity to parasites
	+ Once you have resistance to a dewormer it stays that way, not about will it but when
	+ Benzimidazoles wide spread resistance
	+ Pyrantel developing resistance
	+ Ivermectin no resistance yet
	+ Freezing has little effect on parasites
	+ Hot summers and manure protects pastures
	+ Parasites are higher in the rough areas of pastures but larvae can move to the lawns where horses graze
	+ Removing manure from pastures on a regular basis can reduce and even eliminate parasite from pastures
	+ Use products that work, deworm at proper time of year and based on individual horse need
	+ Goal of project was to get people to make a change in deworming procedure
		- Comprehensive short course offered statewide, attended by 287 farm managers
		- Engaged farm managers in a project to monitor farm strongyle egg production and evaluate product efficacy
		- Supplied microscopes and supplies to host manure parties
		- Paracount – EPG fecal kit
		- Gave people dewormers to use and then retest egg counts
		- 74 farms with 711 horses, data collected from 53 farms
		- Highly effective program, 97% of the farms remained throughout the project
		- Ivermectin is the only dewormer that had no resistance on any farms
		- Farm owners very excited about this program and their commitment

**Carey Williams and Jennifer Weinert (Rutgers)**

* “An Evening of Wine and Equine: Environmental Stewardship on New Jersey Horse Farms”
	+ 2016 - 6 programs throughout the state
	+ 2017 – 4 programs throughout the state
	+ Hosted by area ‘showcase’ farm
	+ In combination with NRCS
	+ Had extra $$ in EQUIP program for horse farms
	+ Partnered with local wineries to do tasting or donate wine
	+ Short informal lectures followed by BMP or pasture tours
	+ 20 – 50 people attended each
* Ryders Lane BMP Demonstration Horse Farm
	+ Many extension tours and hosted pasture walks
	+ Rotational vs. Continuous grazing research; Kenny 2016 thesis research
	+ Burk and Williams 2017, ESS abstract and upcoming paper looking at sugars in the grasses with Rotational vs continuous grazing.
	+ ESC and WSC lower in continuous fields but not enough to make a difference with horse glucose and insulin response
* Weinert doctoral research 2017-?
	+ Compare the effect of intense grazing in continuous and rotational grazing systems on pasture condition in a subsequent growing season following winter exclusion
		- 2 – 1.6 hectare pastures, Grazed Intensively for 2 full years prior to study
		- One Continuous Pasture, One Rotational Pasture
		- Horses Removed from fields in November 2016; No grazing in 2017
		- Pasture Measures collected from April – Aug. 2017, Nutrient analysis, yield, mass, sward components, persistence
		- Pastures managed with minimal mowing to control weeds and remove seed heads
		- Initial Measurements (4-11-2017): % Grass [G] (Planted Forage Varieties) = 38% (ROT) vs. 22% (CONT); % Bare Ground [BG] = 12% (ROT) vs. 26% (CONT); % Live Cover [LC] = 79% (ROT) vs. 56% (CONT)
		- Differences in % G, BG and LC persisted through May, but largely disappeared by June; Decrease in % G in ROT pastures mainly accounted for by an increase in Grass Weeds [GW]
		- Large increase in % Weeds [W] in June/July in CONT field
		- Differences in % G reappeared in July (ROT higher than CONT) and persisted through August; Due to decrease in GW
		- Sward height consistently higher in ROT vs CONT, herbage mass also higher throughout
	+ Development of grazing strategies that are not only economically and environmentally sound, but also provide solutions for horses prone to metabolic dysfunction.
		- 3 Rotational Grazing Systems
		- *System 1:* Cool-Season Control; *Systems 2 & 3*: Integrated Systems
		- Incorporation of Warm-Season Test Forages = “Wrangler” Bermudagrass & “Red River” Crabgrass
		- Objective 1 – Warm Season Grasses. To determine if incorporation of warm season grasses will increase forage availability during the summer months and provide lower NSC to grazing horses.
		- Objective 2 – Grazing Preference. To determine of pasture forage carbohydrate fractions (NSC and NDF) positively or negatively influence grazing duration (i.e. time spent with head down) in healthy adult horses.
		- Objective 3 – Glucose/Insulin. To determine if horse plasma glucose and insulin are correlated with forage carbohydrate fractions and vary with forage type.
		- Objective 4 – Gut Microbiome. To determine if the pasture forage type and carbohydrate profile affect the abundance and diversity of fecal microbiota.
		- Project is funded by NE SARE (Grad student grant), Rutgers NJAES, Rutgers Equine Science Center and seed was donated by DLF Pickseed

**Robert Causey (UME)**

* Chopped forage trial
	+ Double saliva production, chew 4 times longer
	+ Working with Lucerne Farms, Totally Timothy
	+ 6 horses in latin square with three rates, high, medium and zero chaff
	+ Count number of chews in first 5 min
	+ Total time to finish
	+ Using a chifney bit to attach cotton swabs to determine salivation
* Poultry litter treatment in stalls
	+ Superior to lime in ammonia abatement
	+ Used in poultry houses
	+ 1 cup is 1.4 lbs
	+ Good safety record
	+ Reduce flies
	+ Will measure aroma, NH3 and basic microbiology
* Antibiotics and antibiotic resistant bacteria
	+ With vegetables grown with equine compost and do equine antibiotics impact them.
* UME Farm pasture renovation
	+ Using rotational grazing with small sections and small numbers of horses in each

**Mike Westendorf (Rutgers)**

* Bedding trial looking at high (8”) vs. low (4”) bedding
	+ Bedding use, waste disposal, animal and stall cleanliness, cost of bedding, particle production, compost characteristics
	+ Particle production overall had no difference between treatments
	+ More bedding being added to the stall with the high treatment however, the amount removed was the same
	+ Animal and stall cleanliness scores were similar for both groups
	+ Also will look at composting quality of each treatment

**Ethan Schoolman (Rutgers)**

* Survey looking at environmental BMP adoption on farms
* Can be adopted for other states
* Everyone interested talk to Mike and we can work it out

**Wrap up**

* Send Mike any impact statements and any publications
* Need to do a rewrite by the end of next year
* Break into project groups: pasture, parasites, manure, etc.
* Apply for the Multi-state awards, get information from
* Donna was asked by NESARE to put another proposal together to expand her Parasite grant to other states. We have a year to get in the proposal so let us know who is interested
* Next year: U Maine? End of August? Time of year hard?
	+ Tentatively saving August 20-21 in Orono, Maine start Monday after lunch run all day on Tues.
	+ Everyone would fly into Bangor