Peg Reedy
Walworth County Ag/Agribusiness Agent

Programmatic Responsibilities
100% Ag/Agribusiness Agent

Mission Statement

To provide, jointly with the UW institutions and the Wisconsin counties, an extension program designed to apply University research, knowledge, and resources to meet the educational needs of Wisconsin people, wherever they live and work

1. Program Development/Implementation/Teaching Impacts

Increasing Sustainable Management on Small Farms, Emphasis on Pasture and Forage Management

Situation Statement

The programming needs of a county should be prioritized by the educator's position description, the demographics and agricultural statistics identifying production status, and periodic needs assessments. The most recent agriculture needs assessment was completed in 2015. The top educational needs (n=77) were grain production and land use and environmental issues, however, in breaking down the topics within each major programming needs area, several major themes emerged that support the educational work done in the Agriculture and Natural Resources program area. Under livestock, pasture management emerged as the top need. Weed management emerged as a top educational need in grain production, forage production, and small farms and horticulture, as well as insect management. Record keeping and farm succession were ranked high in Farm Financial Management and business management. Not surprisingly, land use planning, farmland preservation, and water quality were primary issues identified in the Land Use and Environmental issues, since Walworth County is located at the urban rural interface at its eastern and southern borders. My educational programming in Walworth County the past five years has primarily been in the areas of Integrated Pest Management, Pasture and Forage Management, Farm Transition and Succession, and most recently, in the planning and hosting of the 2016 Farm Technology Days event to be held in Zenda.

Walworth County has 870 farms and nearly 75% of these are 180 acres or less (2012 Census of Agriculture). Many of these farms are dependent on off-farm income from one or more of the farming partners. To remain economically viable, it is important for these farms to maximize their efficiency of production and monitor their cost of production carefully. Many of these smaller scales farms raise some livestock including beef cattle, sheep and goats, chickens, and horses.

Wisconsin is home to 325,000 horses (WI State Horse Council, 2008) with an economic impact of $1.4 billion (UW-River Falls Survey Research Center, 2008). They are considered companion animals by many regulatory entities, yet they pose many of the management challenges of other categories of livestock. One area is forage and pasture management. Unlike cattle or sheep and goats, the primary goal of pastures and forage is not to achieve weight gain or higher milk production, but to prevent year-round feeding of expensive feedstuffs. Also, a significant number of horses are boarded at stables that have limited access to fields or pastures to apply the manure generated. Manure stacks can become water quality hazards and nuisances for neighbors. Increasingly, the Environmental Protection Agency has inspected equine facilities and documented violations.

Results, Evaluations, and Discussion

Objective 1: Farmers and livestock owners will increase knowledge of pasture management to decrease feed costs, sustain the productivity of pastures and maintain animal health.

The Bi-State Equine group has been in operation since 2004. Pasture management for horse owners has been a topic that has been repeated numerous times. As the price of hay, particularly small square bales that are the choice of most horse owners increases, more small rural landowners want to supply as much forage as possible from pastures. The principles of managed grazing, species selection for horse pastures, renovation, fertility and weed control are topics that are reinforced on an annual basis. I have incorporated pasture walks into several of the workshops where pasture management has been taught. Identification of weed and forage species is much easier when students can examine the actual plants. A presentation on pasture management to horse owners at a Cooperative Plus Equine workshop in 2010 addressed concern about the incidence of laminitis in horses on pasture by many horse owners. A basic understanding of how forage grasses grow and how to manage quality is lacking in many horse owners. Too much lush spring grass, high in soluble carbohydrates, can cause serious health problems. This was a concern with almost a quarter of the audience and led to a good discussion of how much a horse should eat and body scoring. As a result of this presentation, I followed up with four farms to do a pasture walk with the owners to help identify weeds, read soil test results and evaluate nutrient recommendations, and discuss pasture plans for rotational grazing,

A common question that small-scale farmers often pose is whether it is more economical for them to make their own hay, have a custom operator harvest hay on their land, or to purchase hay. A Focus on Forage factsheet written in 2015 (Exhibit 1) addressed the pros and cons of each option both from a strictly economic standpoint and also taking into account other factors including opportunity costs, quality concerns, grazing as an alternative, etc. Excel spreadsheets were developed in cooperation with Ken Barnett, looking at the cost of production for alfalfa hay, grass/legume hay, and grass hay and producers are able to either use typical values for fixed and variable costs or insert their own numbers to determine the economy of producing hay versus purchasing it.

Objective 2: Farmers and landowners will learn to identify plant species that pose a risk to animal health and learn management practices to prevent or manage toxic plant species.

Several presentations on the management of toxic plants were developed for different audiences. The toxic weeds presentation for the 2013 Bi-State Equine Conference was presented as a companion to a presentation on buying hay for horses. Since the presence of weeds in general, and especially poisonous weeds are a quality factor to be considered in buying hay, these topics were covered in depth. Workshop participants were asked to evaluate their pre-and post-workshop knowledge of different topics covered. Pre- and post-session surveys indicated that 28% of the participants rated their knowledge of toxic weeds in pastures and forages at four or five (on a scale from 1-5) before the presentation and 72% gave that ranking following the presentation. Teaching at the 2013 WI Sheep and Wool Festival allowed me to take the message about poisonous weeds to another audience. My brief evaluation consisted on one question: As a result of this presentation, what is one thing you will do in your management of pastures? Over 90% of the audience said they would scout their pastures for the presence of poisonous plants. Since this is the first step in avoiding animal poisoning, this programming objective was met. I have since visited the farm of one person who saw this presentation and identified several poisonous weeds and advised him on control measures. The Kettle Moraine Trail

Riders asked me to speak about poisonous plants at their annual meeting in 2012 since they often encounter many plants along wooded trails that are poisonous to their horses. They were a major impetus behind development of a field guide to help them identify poisonous plants on the trail and at home in their pastures. Over 70 people attended the presentation I gave and well over half recognized poisonous plants present along their trail riding routes. This presentation was repeated at the 2014 Wisconsin Grazing Conference, where for the first time there was be an equine track, recognizing the large number of horses in the state (Exhibit 2, 3).

At this time, A4019 Toxic Plants in Wisconsin Pastures and Forages (Exhibit 4) has been completed and a grant proposal has been submitted for funding to print the publication in a field guide format.

Objective 3: Farmers and rural landowners will increase knowledge of hay and forage quality to maximize economy of purchasing hay and animal performance.

Guided by recommendations from previous workshop surveys and the recommendations of an equine industry focus group established by the Bi-State equine group, nutrition and hay quality in particular have been requested topics. In reaction to recommendations for critical programming needs for 2012, the Bi-State equine group organized and hosted a day long workshop addressing nutritional requirements of the horse, hay analysis, ration balancing, feeding management for the various stages of production, body condition scoring, toxic weeds, and strategies for purchasing hay. I taught both the toxic weeds and purchasing hay segments of this workshop. Following the hay session, participants were allowed to evaluate four lots of hay for quality factors (color, smell, presence of weeds and foreign material, dust, etc.). They were then allowed to see the near infrared spectroscopy analysis to evaluate the hay again for crude protein, fiber, ash, minerals, and relative feed value. They were able to see how each hay lot would fit into a ration that matched their horse's physiological stage of life and activity needs. Most horse owners said they preferred the higher quality hays, even though they understood that most of their animals didn't need as high quality hay based on their activity level. An increase in knowledge as measured by pre- and post-session survey indicated gain in knowledge, but not a willingness to feed a lesser quality hay to meet nutritional needs.

Objective 4: Farmers and rural landowners will learn and use the principles of nutrient management and composting to manage manure in an environmentally responsible way.

A major effort beginning in 2010 was the *Changing Manure Waste Streams* project which was the recipient of a Great Lakes Regional Water Grant. University of Wisconsin and Illinois Extension Educators worked with four stables in Wisconsin and Illinois to establish monitored composting sites and two were the sites of demonstration workshops to teach stable owners about best management systems for manure management and composting in 2011. Extension educators worked with stable owners to teach them how to establish, monitor, and manage compost from manure and bedding with the aid of composting thermometers and moisture meters. The project goal was to build a marketing network that would reduce the amount of manure going to landfills by utilization of finished compost by local gardeners, landscapers, and farmers. Sunflower Farms in Bristol has marketed compost to gardeners for the past four years. Gaia Farms in Lake Geneva now utilizes composted manure produced on their farm to improve fertility of their pastures.

The Walworth County office had a unique opportunity to work from the ground up on a composting site at a new equine facility. We were able to site the composting pad based on the location of the buildings and according to County setback requirements. The stable manager was given guidance on how to monitor the compost pile so it could be turned to maximize the efficiency of the composting process. She also learned how to determine when the compost was ready to be cured and how to test for stability of the finished product, which is to be used to fertilize pastures on site. The new stable was built with the latest in green technology with wind and solar generation of the power needed for the facility, a cistern system to trap rainwater, and an earth tube system to provide geothermal heating and cooling. Building materials and arena surfaces were all made from recycled and resource efficient materials, so in addition to the composting workshop planned for the site, the Agriculture and CNRED programs collaborated to add a sustainable building component to the workshop. Presentations on the science of composting, rules and regulations governing composting, troubleshooting, environmentally and resource efficient construction and a demonstration tour as well as resource packets provided participants with a good overview of the potential of composting to deal with the problem of animal waste disposal.

Sixteen stable owners or managers attended this event. Participants were asked to evaluate their pre- and post-workshop knowledge of different topics covered. Although knowledge increased significantly (on a Likert scale of one to seven, there was an increase in knowledge of 2.3 points), results may have been somewhat skewed since three people had recently completed Master Composter training. Of the stable owners in attendance, there was a follow-up phone survey to determine whether any of them were composting the manure at their barns as a result of attending the workshop. Three were using some sort of modified bin system to compost manure. The host farm spread compost in the spring prior to renovation of pastures, so they are working with the Extension office to develop seeding mixtures and nutrient management plans.

Currently I am managing a $25,000 grant from WI DATCP for farmer education in developing nutrient management plans. To date, 11 farmers have completed plans using SnapPlus software taught in workshops taught by Extension, Walworth County Land Use Department and personnel from DATCP. Each farmer received a $500 stipend for completing a plan that was approved; total number of acres covered by these plans is 4,047. The training targeted livestock producers and those farms enrolled in the Farmland Preservation Program.

2. Examples of Teamwork

In addition to collaboration with office colleagues on a number of projects (4-H Youth Development: MAQA, Fair livestock projects; Horticulture: Holiday Horticulture; Extension Centennial Celebration, Experience Extension) I collaborate with a variety of other agencies and organizations to achieve the greatest educational impact. These partners include: Farm Service Agency, Natural Resources Conservation Service, Department of Natural Resources, Michael Fields Agricultural Institute, WI Department of Agriculture, Trade, and Consumer Protection Farm Center, Farm Bureau, the Farm Fresh Atlas of SE Wisconsin, and the Elkhorn Farmers Market. I also have worked with specialists from the UW system as well as the University of Illinois.

3. Contributions to the Profession/University

The University

University Service:	Activity	Year(s)
UW-Extension (UWEX)		
UWEX Department of Agriculture and Life Sciences		
Non-Tenured Faculty Support	Mentor	2010-present
Scholarship Committee	Chair	2010-2012
Standards, Rank and Promotion	Member	2010-2011
UWEX Agriculture and Natural Resources Extension (ANRE) Program Area		
Team Grains	Member	2001-present
	Team Leader	2010-2012
Nutrient Management Team	Member	2001-present
	Work Group Leader	2004-2006
Forage Team	Member	2002-present
Farm Technology Days	Executive Secretary	2014
	Weed Doctor	
Walworth County UW-Extension Office	Co-Department Chair	2009-2013

The Profession

Organizations	Activity	Year
National Association of County Agricultural Agents (NACAA)	Member	2002-present
Wisconsin Association of County Agriculture Agents (WACAA)	Member	2002-present
	Board of Directors	2005-2007
Epsilon Sigma Phi (ESP)	Member	2002-present
World Dairy Expo	Education Committee	2009-present

The Community

Organizations	Activity	Year
Farm Service Agency (FSA) County Committee	Ex-officio member	2001-present
Farm Bureau Federation, Walworth County Dairy Committee	Member	2001-present
Walworth County Fair Meat Animal Sale Committee	Member	2001-present
NRCS Local Work Group	Member	2002-present
Southeast Wisconsin Grazing Network	Advisor	2003-present
Walworth County Emergency Management Board	Member	2003-present
County Committee		
Farm Fresh Atlas of SE Wisconsin	Board Member	2012-2014

4. Applied Research/Publications

One consequence of the 2012 drought was damage to pastures from extreme heat and dryness and overgrazing, leading to weeds that are unpalatable to livestock and often times poisonous to grazing livestock. As it happens, this is a concern universal among all livestock producers. Additionally, the hay shortages of 2012-2013 resulted in farmers baling CRP and other marginal land leading to weedy

hay. Although most poisonous plants are not very palatable, they become more difficult for animals to avoid when they are dried in hay and plant pieces become mixed with desirable species. One species of poisonous plant, whorled milkweed (*Ascelpias verticillata*), is becoming increasingly common in the lighter soils of Southeastern Wisconsin. Whorled milkweed is a perennial, spreading by creeping rootstocks and by seed. Although cases of poisoning have been rare, whorled milkweed in pastures and forage lead to nearly total lack of forage utilization and refusal of hay containing the weed.

How can whorled milkweed (Ascelpias verticillata), an invasive and toxic weed, be controlled in pastures and forages and what is the optimum application time to provide best control?

A field research project was undertaken to look at the most efficacious herbicide treatments in controlling this troublesome weed in cooperation with Mark Renz, Extension Weed Specialist. The replicated trial looked at the efficacy of aminocyclopyrachlor products on whorled milkweed in a pasture of primarily smooth bromegrass at two different application rates (2.5 and 4.0 oz/acre), compared to a "local standard" of Overdrive® and an untreated check in a randomized complete block design. Crop safety of these products was also evaluated. Weed control was evaluated at 30, 60, and 90 days and again at 360 days to look at long-term control. Herbicide efficacy was extremely variable with no significance at a 10% confidence level. All plots had weeds that produced seed and seed pods were trimmed to keep any further spread of the whorled milkweed in check. One year post-treatment evaluations of the plots indicated regrowth of several of the treated replicates. Several possible explanations for the lack of response to herbicides included significant precipitation within 24 hours of herbicide application, poor coverage due to the morphology of the whorled milkweed, or timing of application. In the second year of efficacy trials at a different location, two different herbicides were applied at pre-flowering and full bloom in a completely randomized design. PastureGard® (trichlopyr + fluroxypyr) was compared to Weedmaster (dicamba + 2,4-D) at two different application concentrations. Unlike year 1, all treatments provided good control with at least 90% control. The plots will be re-evaluated at 360 days (late June 2016). Preliminary results were presented at the 2015 Forage Teaching and Technology Conference in Lacrosse.

Other research collaborations include:
Corn Rootworm Monitoring – Variant network from 2004-2006 morphed into the monitoring work over the past four growing seasons to monitor BT-CRW hybrids for resistance to Bt technology.
Soybean Aphid Monitoring – Scout and report aphid numbers weekly to the Pest Management Network managed by WI DATCP; also collect suction traps weekly from May until October to monitor adult winged aphid movement; these results are reported by the University of Illinois.
Western Bean Cutworm Monitoring – Scout and report WBC numbers bi-weekly to Pest Management Network managed by WI DATCP.

Publications:

Buy It Or Bale It: Is it more cost effective to purchase hay or bale it? 2015, P. Reedy, Focus on Forage Fact Sheet
Toxic Plants in Midwest Pastures and Forages (A4019), 2015, R. Gildersleeve, A. Gurda, P. Reedy, and M. Renz
Cash Rental Rates in Walworth County: Considerations when negotiating an equitable rental rate, 2013**,** Peg Reedy, http://walworth.uwex.edu/agriculture/
Farm Fresh Atlas of SE Wisconsin, 2006-2014, Various Extension and Agency partners and P. Reedy, Circulation of 80,000 in Southeast Wisconsin

5. Administrative Responsibilities

WI Farm Technology Days Executive Secretary – 2013-2016
Co-Leader Team Forage Grazing Workgroup – 2012-2016
WI DATCP Nutrient Management Grant ($25,000) – 2015
Co-Department Head - Walworth County Office 2011-2014

- Responsible for State responsibilities
- County personnel records and performance reviews

6. Professional Growth & Development

- WI Crop Management Conference – annually
- Agronomy Update Meetings – annually
- Soil and Water Management Meetings – annually
- Pest Management Update Meetings – annually
- WI Grazing Conference – annually
- WI Corn Soy Conference – 2015, 2016

Other related professional development:

- Farm Transition Professional Development – Badgerland – December 2015
- Farm Tax Update Seminar – HR Block – November 2015
- Forage Teaching and Technology Conference – Lacrosse, September 2015
- Cover Crops Workshop – Michael Fields Agricultural Institute – August 2015
- Financial Management Professional Development – Badgerland – July 2015
- Farm Succession Professional Development – Center for Dairy Profitability – September 2014
- Fearless Farm Finances, March 7, 14, 2013
- International Farm Transition Network – Farm Succession Coordinator Training – 2012
- Master Composter Training – April 9, 2011

7. See Attached

8. Additional Programs awards to Highlight or Share:

In the past few years, Farm Succession and Transition has been the program growing emphasis. Based on the results of a statewide survey to assess the level of transition planning among the state's farmers that was written and distributed by Rose Skora, Amy Greil, and Peg Reedy and analyzed with Qualtrics, only about half of farmers are prepared to transition their farm businesses to the next generation. Sixty-nine percent of the respondents have identified a person to take over the farm, almost overwhelmingly a son, daughter, or son-in-law and 79% of these designated people are already farming. The survey indicated that the main barriers to planning farm succession were minimizing taxes during succession, legal transfer of farm ownership to heirs, fair and equitable treatment of adult heirs, management responsibility transfer to heirs, and estate planning. About 77% of farmers either

have no plans to ever retire or plan to only semi-retire and many have not planned for retirement income or done estate planning. Over half of all farmers completing the survey are sole proprietors, with little liability protection or input from the next generation of farmers on the management and day-to-day operation of the farm business. Based on these results, I have hosted several workshops that have dealt with the steps needed for successful analysis of the farming operation, communication between operating partners, and planning for the succession of the farm and farm business to the next generation. A very successful partnership with the Farm Center (WI Department of Ag, Trade, and Consumer Protection) has allowed for individual family consultation and planning following participation in one of the workshops. Following the 2014 workshop, over 40% of the participants scheduled follow-up meetings to develop succession plans and to date, six families have completed written plans and worked with an attorney to codify these plans. The latest workshop helped participants understand the legal steps they can take to protect the family farm business and land in the event of death, disability, divorce, disaster, by succession planning. The use of operating agreements when multiple family members are farming together, tax updates, and Medicaid recovery and long-term care insurance were also topics covered. Of the 23 people completing the evaluation (n=43) nine had previously attended one of the workshops, so the relatively more advanced topics were the highest rated and the highest gain in knowledge when compared to pre- and post-session ratings (from 2.3 to 4.3 on a Likert scale of 1-5 for business and estate planning). Four families from this workshop requested follow-up for planning.

Finally, one of the most common questions posed to most Extension Agriculture Educators is the price of farmland rent in the county. Although the Wisconsin Agricultural Statistics Service publishes a county-by-county average rental rate, the actual rates received or paid vary greatly depending on a number of factors, including soil productivity, grain prices, field size, location, etc. A paper was developed for Walworth County which built on the weighted averages of acres of different soil types and the rental rates for each. Based on the soils identified in the State Soil Survey that predominate in each rental area, an approximate rental rate can be determined, qualified by many of the factors that may affect actual rental rates paid or received. This paper (Exhibit 5) routinely gets among the highest hit numbers for the Walworth County Extension website.