

2016 Extension Program Conference

Poster Abstracts 2016

Research posters

1. Effects of hay-rake type on exogenous ash content of alfalfa hay

Abby Neu, Extension Educator, Livestock Poultry

Ash content of alfalfa (*Medicago sativa* L.) hay typically ranges from 6% to 8% dry matter (DM) with ash contents > 8% indicating hay that is likely contaminated with soil. The objective of this research was to determine the effect of rake-type on ash content of alfalfa hay. Research was conducted in 2015 in Minnesota (loamy sand), Pennsylvania (silty loam) and Wisconsin (silty loam) on first cutting alfalfa hay. Treatments involved consolidating two swaths of mowed hay with a wheel rake, side-delivery rake, rotary rake or a hay merger. To show changes in ash throughout haymaking, random samples were taken from the standing forage, cut swaths, windrows made by each rake type and from bales (Minnesota and Wisconsin) or haylage (Pennsylvania). Samples were analyzed for ash content using wet chemistry procedures. Statistical significance was set at $P \leq 0.05$ and mean separations were determined using Tukey HSD and are presented as percent DM. Differences in ash content were found between rakes at two locations with the wheel rake resulting in the greatest amount of ash and the merger resulting in the least amount of ash. Farmers looking to reduce ash content of hay should consider using a hay merger when combining swaths.

2. Clinic referral to a culinary nutrition education program

Betsy Johnson and Jessica Norman, Extension Educators, Health & Nutrition

In partnership with Northeast Minnesota SHIP partners, a culinary nutrition/clinic referral partnership project was undertaken to “improve access to community-based healthy eating/active living programs for patients at higher risk for developing heart disease and diabetes.” Objectives included: 1) promotion of healthy eating by improving shopping and food preparation skills, and 2) increasing physical activity and fruit/ vegetable consumption. The target population was low-income clinic patients at greater risk for chronic disease due, in part, to limited food skills and/or access to healthy food and physical activity. Participants in the project showed statistically significant positive behavior change in 11 of 13 measures for healthy eating and physical activity, behaviors with potential to help prevent heart disease and diabetes.

3. Understanding networks as ecosystems

Noelle Harden and Jamie Bain, Extension Educators, Health & Nutrition

Presents findings from our research about statewide food networks based on an overarching framework of understanding networks as ecosystems. We will use ten points of comparison with

ecological principles to illustrate opportunities, challenges and best practices for networks. We will present research findings that can guide the work of any diverse network of people seeking to address grand challenges. Our poster will also promote an understanding of what food networks are and how they serve as agents of change within the food system.

4. Addressing the Grand Challenges: Collaborating with the larger university

Mary Schroeder, Extension Educator, Health & Nutrition; Bonnie Christiansen, SNAPEd Regional Coordinator; Margaret Haggemiller, Associate Program Director, SNAPEd Metro; and Stephanie Hakes, SNAPEd Regional Coordinator

Project breakFAST exemplifies how University of Minnesota Family Medicine and Community Health (FMCH) and Extension collaborated to address the Grand Challenge of Feeding the World Sustainably by making access to school breakfast equitable for rural high school students. FMCH designed and evaluated the study, recruited schools and managed the overall project. Extension's role was to train and support schools in implementing a Grab and Go Breakfast, conduct fidelity checks and serve as liaisons between the research team and the schools. This four year, multi-wave intervention study in 16 rural schools was designed to increase students' participation in school breakfast through policy changes, marketing, and a Grab and Go Breakfast. Intervention schools increased participation in school breakfast by 49% compared to control schools. Participation among a cohort of 904 breakfast skippers increased by 81% more than the control group. In addition, students in the intervention schools ate more fruit and reported no change in calorie intake compared to the control. Breakfast participation increased among all socioeconomic levels indicating equitable access by all students. Extension will build on the success of Project breakFAST by creating a toolkit for schools and implementing Grab and Go breakfast in SNAP-Ed qualifying schools in Minnesota.

5. Latino Fathers Promoting Healthy Youth Behaviors

Isabel Lopez, Maria Villarraga, and Youjie Zhang, Graduate Research Assistants, Family Development; Silvia Alvarez de Davila, Extension Educator, Family Resiliency; Rafael Flores, SNAPEd Educator, Latino; Misty Blue, Laura Perdue, Extension Educator, Health & Nutrition, Urban; Marla Reicks, Extension Nutritionist; and Ali Hurtado, (former) Research Fellow in Evaluation, Family Development

Latino Fathers Promoting Healthy Youth Behaviors is a NIFA-funded, longitudinal intervention to prevent obesity among children in Latino families. This project aims to lower the risk of obesity among Latino youth by incorporating nutrition and physical activity components into the established Padres Informados, Jóvenes Preparados program. This project follows a community-based participatory research approach, and unfolds in three stages: Stage 1- Planning; Stage 2 - Implementation; Stage 3 - Dissemination and sustainability.

During Stage 1, we will identify a father advisory board to co-develop/adapt the existing family skills intervention. This poster presentation will describe preliminary focus group findings. We conducted focus groups to understand Latino families' concerns and current parenting strategies regarding youth nutrition and physical activity behaviors. Nine focus groups involving 20 Latino families were conducted in three communities, Rochester, St. Paul and Minneapolis.

Each location had three focus groups comprised of mothers, fathers and youth between 10-14 years, conducted separately. Focus group questions were designed to investigate family members' experiences and behaviors related to nutrition and physical activity as well as their opinions about possible program topics and activities. Preliminary results show emergent themes from a qualitative analysis of the focus group transcripts using Nvivo analysis software.

6. The silver tsunami and rural small business transition: What can communities do?

Liz Templin, Extension Educator, Community Economics and Scott Chazdon, Evaluation and Research Specialist

Sixty percent of current small business owners are baby boomers. The key question is “What role can community and economic development organizations play in business transition?” To address this question, we focused on successes in Greater Minnesota cities under 7,500 population. The literature review found business management research for owners including the biggest barriers to succession planning: not seeing the benefit, cost, time and concern about confidentiality. There was no literature on the community’s role. This study surveyed new business owners and interviewed community informants. Surveys were sent to 403 buyers who had owned their businesses between 3-8 years. Of the 118 successful businesses that responded, 41% increased employment, 58% increased customer base and 68% increased sales volume since owning the business. They used an average of four resources per business transfer with bankers, accountant, and a mentor being the most frequently cited, but existing economic development institutions were not widely used. Challenges in operating the business included financing and employee issues. Interviews with community informants identified the importance of a local leadership. Communities have sponsored business improvement workshops and one-on-one technical assistance to owners. Some communities have formed coops and ESOPs to retain their grocery store.

7. Pastured vs. free-range: A comparison of two broiler production systems

Ryan Pesch, Extension Educator, Community Economics and Wayne Martin, Extension Educator, Alternative Livestock Systems

Sustainable agriculture operators are seeking broiler production systems that increase animal welfare and are profitable. Our posters will share results from research which compared the costs and benefits of a free-range system to the University of Minnesota's pastured poultry trials.

8. Creating an excellent train-the-trainer experience

Neil Linscheid, Extension Educator, Community Economics; Brigid Tuck, Economic Impact Analyst; Elizabeth Templin, Extension Educator, Community Economics; and Scott Chazdon, Evaluation and Research Specialist

Sharing an Extension program with colleagues from other states requires the same commitment to adult education principles that are used when training Extension participants. This poster describes a deliberate effort to design and conduct a high-quality train-the-trainer effort that shared a Minnesota Extension program with professionals from other states. This poster will share the process used to customize a train the trainer session for five states on a community economics program program. Keys to the success included understanding each state's Extension structure, participant's understanding of an economic analysis tool (IMPLAN), how participants wanted to use the program upon return, involving them in the delivery of a program, and allowing adequate reflection and planning time following the emergence experience. Our evaluation method of the training included end of session discussions, interviews with the training team, end of session evaluations, and a follow-up survey of outcomes. Our efforts focused on enhancing the capacity of our colleagues to allow them to build the capacity of leaders in their communities. We were successful in our efforts to train others, but in addition we learned a great deal that has led to program innovations.

Public Value posters

9. Evaluating for public value

Scott Chazdon, Evaluation and Research Specialist; Mary Marczak, Director, Urban Family Development and Evaluation; Emily Becher, Research Associate; Sam Grant, Evaluation Director, Youth Development; Nathan Meyer, Program Leader, Fish, Wildlife and Conservation Education & Housing Tech, Forestry; and Alexis Troschinetz, CERTs Research Metrics Coordinator

This poster is envisioned as an introduction to the public value poster session. It will explain the "Evaluation for Public Value Framework" and public value narrative rubric that emerged from the "Most significant change" pilot project in Extension's Central Region in 2014. This poster will provide a conceptual grounding so that conference participants better understand the intent of public value posters, with hopes that this year's session will spur further interest in submitting these types of posters in the future, in focusing more on the ways that Extension programming produces public value, and ways to plan and conduct evaluation activities that better communicate the public value of our programs.

10. Managing nitrogen fertilizer for food production and water quality

Ryan Miller and Brad Carlson, Extension Educators, Crops; and Dan Kaiser, Ext Soil Scientist-Soil/Plant Nutrition Management

Achieving global food security for nine to 10 billion people by mid-century is a grand challenge that will create unique sets of challenges for agricultural producing areas around the globe. In the upper Midwest there is a need to increase agricultural output while minimizing agricultural inputs and environmental impact. Learn about the importance and significance of nitrogen fertilizer in crop production and how community members came together to address research questions related to novel approaches of nitrogen fertilizer management. See the importance of building a collaborative approach to developing and researching crop management questions. Gain experience with the challenges inherent to this sort of a research approach, and learn

ways to overcome these challenges. Finally, learn about developing a community-driven nitrogen education program. See how partnerships were built and member roles were determined. Learn about the value of needs-based community-driven education programs when addressing controversial subject matter.

11. Introducing the Minnesota Bee Atlas

Britt Forsberg, MN Master Naturalist Explorers Program Coordinator

The Minnesota Bee Atlas is a new, grant-funded citizen science project. Citizen science brings the public into research by inviting them to be active participants. The Minnesota Bee Atlas recruits and trains volunteers to contribute observations that will create a publicly-accessible database of bee distribution and diversity. This information will be helpful to better understand the current status of wild bee populations and inform land management and policy.

12. Water Wisely, a train-the-trainer curriculum for Master Gardener volunteers

Kathy Zuzek, Julie Weisenhorn, and Sam Bauer, Extension Educators, Horticulture

Wise watering practices in the home landscape save money, help protect Minnesota's water supply and optimize plant health. Nearly one-third of residential water is used to irrigate home landscapes. Improper watering practices impact the availability and/or quality of groundwater, lakes and streams. Some landscape plants, such as lawns, generally need less water than we think, while trees sometimes need more.

13. Fending off nuisance algae

Shahram Missaghi, Extension Educator, Water Resource Management & Policy

Algae are common in surface waters throughout Minnesota. They are microscopic organisms that are a natural part of any aquatic environment. When temperature and water conditions are right, algae, particularly blue-green algae, can grow very rapidly and reach extremely dense populations (blooms). Algal blooms can turn the water green and smelly, contribute to fish kills, and at times produce toxins that pose a health risk to people and animals. The Legislative-Citizen Commission on Minnesota Resources has funded an algae research group (Miki Hondzo, PI) that includes Extension (Co-PI) to investigate the detection and prediction of blue-green algal blooms in lakes. Extension is leading the strengthening of the connection and communications between researchers, communities and policy makers by expanding the existing State of Minnesota algae (Harmful Algal Bloom) Work Group to integrate research efforts at various departments and agencies. This poster will include a graphic research abstract, the current and future efforts, and the expected outcomes and impacts. Algal blooms have been on the increase in Minnesota in recent years. Extension is well poised to assist our

communities to better understand how algal blooms develop in our lakes and bring us one step closer to algal bloom prediction and prevention.

14. Informed decision-making for success in a changing world

Joyce Serido, Associate Professor, Family Finance; Antonio Alba Meraz, Rebecca Hagen Jokela, Lori Hendrickson, and Sharon Powell, Extension Educators, Family Resiliency

The transition from adolescence to adulthood takes place in an era of fast-paced change aided by technology and fueled by a 24/7 economy. Because the role of Extension is to help youth and families make informed decisions, we will discuss how we reach youth in different contexts to provide the information they need to make good financial choices to achieve their life goals.

Family-centered education: We focus on promoting family communication to empower Latino parents and students to seek out available financial aid resources. The approach is to engage immigrant Latino parents and students in 2-hour interactive workshops conducted in both urban and rural settings.

School-Centered: We focus on emphasizing the importance of early planning and ongoing communication. The approach is to provide customized presentations and workshops to complement existing offerings through collaboration with staff. Examples include working with school counselors to design short briefing sessions during parent-teacher conferences; working with director of community education to plan district-wide workshops for parents and students.

Youth-serving organizations: We focus on promoting goal-setting and problem solving skills among youth to improve academic achievement. The approach is to partner with community organizations to integrate programming across academic, nutrition and financial domains.

15. Anishinaabeg Zhooniya (The People's Money)

Jennifer Garbow, and Rebecca Hagen Jokela, Extension Educators, Family Resiliency

Anishinaabeg Zhooniya (The People's Money) is a two-part monthly workshop focused on providing culturally relevant, personal financial education to Red Lake Nation band members, in partnership with the New Beginnings program in Redby, Minn. New Beginnings serves approximately 1,200 Red Lake Nation band members per year, providing the band's technical and training programs, adult education and GED completion, job placement, and social services; including MFIP and SNAP. The first four-hour class is designed to introduce basic financial concepts that are culturally appropriate to American Indian audiences. The second two-hour class recruits participants from the first class and works more in-depth with participants to develop a money management plan, using two worksheets: American Indian Income and American Indian Expenses. The worksheets were developed as a result of an exploratory study

to learn more about how American Indian families organize their resources. The public value of Anishinaabeg Zhooniya is that the workshops were co-created in partnership with New Beginnings and Extension to address a gap in financial resources and tools for American Indian audiences. During the course of an extensive effort to build the organization's capacity, we made modifications to the worksheets and we piloted them in four workshops. Evaluation data indicates that the participants are learning new financial concepts/skills and are changing their behavior as a result, and approximately half return voluntarily to attend the second class.

16. Setting the stage for effective family and community engagement in partnership

Silvia Alvarez de Davila, Extension Educator, Family Resiliency; Kathleen Olson, Program Director, Partnering for School Success; and Debra Landvik, Educational Specialist II and Parent Involvement Coordinator, MN Department of Education

A team of educators from the Extension Center for Family Development in partnership with an education specialist in Family- School Parent Involvement at the Minnesota Department of Education, developed a series of three workshops targeting teams of school administrators, district leaders, and other educational partners working with families. The overall goal was to work with schools to intentionally engage families and communities to work together to support student academic achievement. In these workshops 43 participants from 24 schools (16 districts) learned ways to engage families and their communities through multiple levels, and identified resources available through the Extension and Department of Education websites. The trainers used research based educational tools and shared specific curricula, and educational materials encouraging participants to engage families to become active actors in their children's education. After the training, participants were equipped with practical tools to develop a plan and apply frameworks and activities to identify culturally appropriate strategies in their schools. Workshop participants completed a post survey and provided feedback. In this poster the authors highlight challenges and opportunities and share their reflections about their efforts to work in partnership to reach the same goals, as well as further steps to continue this initiative.

17. Beyond fishing: The Mille Lacs visitor profile

Xinyi Qian, Extension Educator – Tourism Specialist

Visitor Profile, an applied research program, provides data on visitor characteristics and behavior essential to destination marketing and tourism planning. Based on information gathered from visitor "intercept" surveys, the program helps destinations know their customers and grow their businesses, with spillover benefits for the broader community. Target Audience: Lake Mille Lacs has been known for walleye fishing. However, increasingly strict fishing regulation on the lake has had complicated impact on its tourism industry. Additionally, the most recent traveler information for the area dated back to 2001. Clearly, updated visitor profile information was needed to assist with its tourism marketing and product diversification efforts.

Why Extension? The Tourism Center, respected for its research rigor and credibility, has over 20 years of experience in conducting visitor profile projects throughout the state. The Center has built trust by establishing long-standing relationships with key stakeholders in the state,

including tourism promotion organizations, public agencies, tourism businesses, and industry organizations.

Outcomes and Impacts: The Visitor Profile findings have informed the county's economic development plan and marketing campaigns by Mille Lacs Tourism Council. The poster will highlight the key messages of the Visitor Profile and the ways these messages are changing tourism discourse in the area.

18. Fostering youth capacity to imagine futures in higher education through campus immersion

Joanna Tzenis, Extension Educator, CYFAR

Presents the research-based program design and impact data of the 4-H campus immersion program—a 4-day, overnight campus experience designed for middle school youth who experience educational barriers. The immersion program is situated as part of the Minnesota CYFAR Project which is a federal, five-year grant. This larger project supports Urban 4-H STEM Clubs, in which young people explore STEM topics, imagine their futures in higher education and set and achieve educational goals together with their peers, program leaders and parents or guardians. Campus immersion is the culmination of their year-long club experience: They explore STEM fields with university faculty and staff, make educational plans through a new 4-H curriculum, and enjoy student life by staying in dorms, eating in the cafeteria and engaging in recreational campus activities. Through the use of lecture, hands-on activities, and group discussions, the presenters highlight how elements of the program model foster youth abilities and skills to pursue higher education amidst barriers. Additionally, by sharing preliminary evaluation and research findings, the presenters will highlight the experiences of the youth participants, including sharing the ways youth are beginning to reimagine what is possible in their lives and some of the action steps they are now taking to achieve their educational aspirations.

19. Improving childhood eating behaviors and building local food systems through farmers market incentive programs

Jessica Norman, Extension Educator, Health & Nutrition

Farmers market programs are a viable, community-based strategy for targeting the food environment and eating behaviors of children. The Power of Produce (PoP Club) is a farmers market incentive program that provides children ages 5 through 12 with a weekly \$2 token to spend on fresh fruits and vegetables and food plants. Various Minnesota farmers markets, such as the Maple Grove Farmers Market and Monticello Farmers Market, have implemented the PoP Club and reported success. For example, the results of the 2014 PoP Club pilot at the Maple Grove Farmers Market suggest that the program helps to increase child engagement at farmers markets and encourages children to try new fruits and vegetables. It also increases family participation at farmers markets and has the potential for increasing fruit and vegetable consumption of children at home. The purpose of the presentation is to discuss the process of implementing the PoP Club and the impact of the program on food access, local food systems,

and the attitudes and behaviors of children. We will also discuss the progress and significance of the statewide PoP Club toolkit for Minnesota farmers markets.

20. Retail produce handling education for rural grocers and specialty crop farmers

Greg Schweser, Associate Program Director, Sustainable Local Food Systems; Cindy Tong, Extension PostHarvest Horticulturist; and Karen Lanthier, Assistant Program Director, Sustainable Ag & Food Systems

Extension's Regional Sustainable Development Partnerships have partnered with the University of Minnesota Horticulture Department and local food researchers to develop a how-to guide for specialty crop farmers to sell their produce to rural grocers; develop a produce handling toolkit and deliver on-site training for rural grocers; and develop a specialty crop local food buying guide to encourage rural grocers to purchase locally grown specialty crops. This poster will highlight the results of this partnership and the benefits of these resources to farmers and grocers around the state.

21. Improving health and nutrition through garden-based programming: Three projects in three regions

Callie Recknagel, Susan Draves, and Darlene Collins, SNAPEd Regional Coordinators

University of Minnesota Extension's SNAP-Ed educators provide educational opportunities and support for community and school gardens across the state. These three case studies highlight the breadth of support that they provide as they share knowledge about gardening and cooking for improved community health and nutrition. The Pillsbury United Communities Community Garden Project (Minneapolis) is enacting system change by developing an access pathway for the use of public land by community members to grow food in two Minneapolis neighborhoods. Through this project, SNAP-Ed has helped increase access to garden space, produced food for the community, promoted gardening, and hosted cooking and nutrition classes. The Hawthorne Learning Center (Rochester) garden crew learns English by way of an evidence-based ELL gardening curriculum. Utilizing adult learning principles centered around the on-site raised bed gardens, the teachings are relevant to the learners. Participants share their own home country gardening techniques and vegetable use recommendations. Vandyke Elementary School (Coleraine) has implemented a garden program to help contribute to the reduction of childhood chronic illness by increasing knowledge of the health and nutrition benefits associated with healthy eating, increasing fruit and vegetable consumption by making produce easily accessible, and increasing the amount of time children spend outside being physically active.

22. Plant Elements of Design: A plant selection tool to help you help citizen gardeners

Julie Weisenhorn, Extension Educator, Horticulture

YouTube link – About the program: <https://youtu.be/mYbeyci-n1g>

Sustainable landscape design focuses on long-lived plants that thrive in their growing conditions. Too often, gardeners are wow'd by the visual aesthetics of a plant and neglect to take into account its optimal growing requirements – and whether the site they are selecting for meets those requirements. The Plant Elements of Design plant selection program supports the landscape design process by providing a tool for selecting plants based on matching their characteristics to the site. This program is useful as a reference for various audiences including horticulture students and educators, landscape designers and architects, Master Gardeners, home gardeners, nurseries and garden centers, and landscape contractors, managers, and maintenance firms. This free, online database is populated with 2745 woody and herbaceous plants including over 5000 downloadable images. Plants can be chosen using 19 different plant characteristic and 350 site categories such as plant type, size, soil type, light requirements, texture, seasonal interest, design use and landscape use. All perennial plants in the database are considered hardy in USDA zone 4 with adjoining zones indicated. Users can print plant data sheets including images, and select and export selected plants to a .csv file for use as a plant key, project management, and landscape planning. The Plant Elements of Design was developed over 15 years and currently information provided for each plant is based on the knowledge and experience of University of Minnesota specialists, experienced gardening educators, and industry professionals.

23. Minnesota Yard & Garden Ask an Expert builds relevancy and value answering questions

Julie Weisenhorn, Extension Educator, Horticulture and Jackie Froemming, Extension Educator, Master Gardener Program

Citizens look to Extension Horticulture for unbiased, research-based advice on establishing and maintaining healthy yards and gardens. Over the past decade, changes in expectations, culture and technology have required Extension to provide answers in ways that fit current lifestyles. Ask an Expert (AaE) is an online question-answer tool hosted and supported by national cooperative Extension (eXtension.org). On the surface, AaE clearly serves as a means for Extension to help citizens solve problems quickly and efficiently. On a deeper level, AaE provides a powerful tool that strengthens Extension's relevancy and value to the individual's daily life, and the connection they have to their land grant university. In 2015, 18 active Extension horticulture educators and Master Gardeners answered 6,914 questions from Minnesotans (average response rate per question: less than 1 day). AaE is one of the volunteer activities available to Master Gardeners. Volunteers are trained by Extension educators who lead the AaE Minnesota Yard & Garden group and are mentored by experienced Master Gardener colleagues. Volunteers help each other with tough questions via a very active listserv, and are part of the larger eXtension.org AaE and Horticulture communities of practice. Question topics range from basic plant identification to more complex explanations of landscape best practices to positive identification of emerging invasive species. In spring 2016, a Master Gardener positively identified a new infestation of black swallow-wort from pictures sent by a homeowner through AaE, and connected the homeowner with the MDA Arrest-the-Pest. (average response time: less than 24 hours per question), and we are on-track to exceed this rate with over 3500 questions answered to-date.

24. The public value of deep winter greenhouse research and Extension (e-poster)

Caryn Mohr, Assistant Program Director, Regional Sustainable Development Partnerships; Teri Burgess-Champoux, Program Director, Health & Nutrition; Joshua Rice, Extension Specialist, Science of Agriculture; and Greg Schweser, Associate Program Director, Sustainable Local Food Systems

Extension Regional Sustainable Development Partnerships' (RSDP) work on Deep Winter Greenhouses (DWGs) addresses the need for Minnesota small- and mid-scale farmers to maintain year-round production. Recent University research supported by RSDP has found promising early evidence for the environmental and financial benefits of DWGs. Interest has grown, and in 2016 RSDP launched a statewide campaign to build five DWGs based on a prototype design by the Center for Sustainable Building Research (CSBR). From 2016-19, research conducted on these DWGs will investigate how the technology can be maximized to support behavior change (adoption of the technology). RSDP is uniquely positioned to address this issue due to the connection between scholarly expertise and access to community platforms needed to test and scale emerging DWG technology. This body of work illustrates Extension's attention to emerging needs, support of scholarship, unique position as a trusted statewide network, and potential widespread impact on Minnesota's food system, which aligns with the Minnesota Food Charter. Existing DWG producers will be surveyed for their perceptions of the impact of RSDP DWG services, change in participant (farmer) production practices, and impacts on the broader community and Minnesota's food system.