

Title: Specialty crop diversification opportunities to enhance the viability of small farms

Non-Technical Summary

A multi-disciplinary approach to providing research and Extension support around specialty crops is needed in support of small farms and supporting agencies. New market opportunities are emerging for many of these crops, along with scale-appropriate technologies for smaller farms to maintain viability. Diversification is part of that story. Much of specialty crop agriculture has faced challenges from higher input costs, new competition, and diseconomies of scale. Collaborations across research and Extension professionals in Horticulture, Agronomy, Entomology, Ag Economics and other specialty crops disciplines in the participating states will facilitate the exchange of ideas and innovations that will help small specialty crop farmers deal with production, risk, and markets. Many of these scientists have worked together regionally on specialty crop research and Extension projects for many years.

The target audiences include the farmers in the collaborating states, the corresponding research and Extension communities, and government and agency professionals that also support specialty crop activities. The activities, coordinated through annual meetings and outreach through the Center for Crop Diversification, will be conducted specifically with a view toward packaging new findings for small specialty crop farms across the regions. This will be through coordinated production research, field days, webinars and other Extension outreach materials.

Markets and economics are critical areas for specialty crop farmers to be sustainable. Many specialty crop farmers in the regional are small, limited resource, and new to production. This project will seek to develop resources through research and Extension that will particularly address the needs of this audience in their market context.

Statement of Issues and Justification

Agricultural production is a vital part of the specialty crop economy, including in Kentucky and surrounding states. The growth of the local foods movement — in a context of increasing environmental constraints on large production systems — offers farmers with small acreages an opportunity to improve their farms' viability. They can accomplish this through diversification, but only if they have the production and marketing expertise required to grow and sell crops profitably. The states participating in this project (KY, IL, TN, IA, OH, IN, UT, DE, WA, MN, WV, NC, GA) are home to 462,089 small farms that encompass 179 or fewer acres (Census of Agriculture, 2022). Increasing development of direct marketing channels, including dramatic growth in the number of farmers markets and growth of farm to school programs in the region, provides small farmers new opportunities to market their products. Meanwhile, high tunnel production has been increasing because it offers farmers an opportunity to extend the growing season, enabling them to sell fresh produce earlier and after the growing season ends, when their

crops demand higher prices. High tunnels also mitigate risk and increase supply of local foods to regions with food access limitations. High tunnels also provide year-round income to small farmers.

The Center for Crop Diversification (CCD) has been a widely utilized repository for specialty crop research and Extension resources with increasingly regionally-oriented resources. This includes resources for market prices (farm markets and produce auctions), water quality and FSMA training, and a library of crop profiles, budgets, and other decision tools for specialty crop producers. The CCD has evolved into a platform for regional sharing and a ready platform through which to facilitate SERA-45 activities. The SERA-45 website is housed within the CCD website at the University of Kentucky. The Center's resources have been downloaded over 1 million times by more than 300,000 users between 2016 and 2024.

The Seasonal High Tunnel Initiative within the USDA- Natural Resource Conservation Service (NRCS) Environmental Quality Incentives Program (EQIP) offers financial assistance to agricultural producers interested in pursuing high tunnel crop production and has encouraged adoption of this technology. The program having started in pilot efforts in other states by NRCS around the country, began in Kentucky in 2012, and more than 500 high tunnels have either been built or are planned for implementation.

(http://www.nrcs.usda.gov/wps/portal/nrcs/detail/ky/newsroom/releases/?cid=nrcs142p2_009534).

Over 26,000 high tunnels have been funded through the USDA EQUIP Program. Of these, over 3,000 high tunnels are in Central Appalachia. The situation is similar in other states; since 2010, 7,020 high tunnels have been built or are planned through EQIP in across the U.S. South through 2020 (Ernst et al, 2020).

Stakeholders for crop diversification information include farmers interested in both field and high tunnel production of horticulture crops; Extension agents, specialists, and associates; NRCS professionals; Future Farmers of America instructors; and others who advise producers. The Center for Crop Diversification at the University of Kentucky conducted a survey in June of 2014 to assess crop diversification needs in the region. The survey was sent to more than 400 county, regional, Extension, and state department of agriculture professionals in Kentucky, Illinois, Indiana, Ohio, Tennessee, and West Virginia who help producers with questions about specialty crops. Grower technical assistance needs for production were identified, along with market and farm enterprise integration challenges. This project will conduct further assessments of resources and resource needs on a regular basis with a view toward Extension, education, and publications/products related to crop diversification.

Other research committees (S-1088) focus on national marketing issues related to produce, but tend to focus almost exclusively on research issues within Ag Economics. Several SERA-45 members also participate in S-1088 and will endeavor to share opportunities for project collaboration. Projects like SERA-47 focus on local food systems in the South and, while regionally similar, multi-disciplinary (at least across social sciences) and sharing market focus, SERA-45 focuses on coordination specifically in the context of specialty crops.

Objectives

1. Develop research-based production information about specialty crops and systems that have potential to be profitable for small farms. These include a) protected agriculture (high and low tunnels, greenhouse production of lettuce and other specialty crops such as tomatoes and strawberries), b) organic production systems, and c) small-scale production systems
2. Coordinate research and Extension activities among participants, including a) development and presentation of trainings, including webinars, on crop diversification topics, b) development of print publications that will be made available electronically on the production and marketing of specialty crops in the participating states, and c) development of videos illustrating production practices and marketing options for specialty crops. Webinars, videos, and print publications will be disseminated via the University of Kentucky's Center for Crop Diversification website (<https://www.uky.edu/ccd/>), as well as through the Center's newsletters and social media outlets. Research results and Extension products will also be disseminated via field days and meetings in participating states.
3. Expand the activities of the Center for Crop Diversification to include price reports (farmers markets, produce auctions, farm to school/institutions, and retail grocery) from the participating states, in order to centralize resources that growers throughout the region can use to determine how to set prices for their products.
4. Conduct market research in the participating states on consumer preferences and marketing channels that are most effective and profitable for small farms.

Procedures and Activities

Objective 1: Participants from specialty crop disciplines such as Horticulture, Agronomy, Entomology, Ag Economics will conduct applied research on production systems, such as protected agriculture (high and low tunnels, greenhouse production) and organic production that are represented in the participating states. Identification of appropriate crop varieties is recognized as a key area for research, but we expect other topics to be identified and addressed as the project unfolds – particularly around aspects of nutrition and sensory acceptance by consumers, sustainability measures, climate suitability, and local production/market fit. Collaborators on this project will share yield and other agronomic data from their respective research projects among the group. Participants plan an activity to identify standard protocols for data collection and variety trials. Participants plan to include small-scale production research to meet the needs of small farms in the region.

Objective 2: Participants across the specialty crop disciplines will collaborate on trainings, including webinars, on high tunnel production, organic production, and beginning farming opportunities. They will work together to develop a registry of growers throughout the participating states who are willing to share how they assess labor needs, do record keeping, etc. Participants will collaborate on development of print publications that will be made available electronically on the production and marketing of specialty crops, including modification of existing publications that are state-centric to include caveats to address production and marketing issues specific to each participating state. They will collaborate on the development of a print publication to deal with new enterprise startups. Questions this publication will address include: What crops should I grow? How do I make those crops profitable? Sustainable? How do I determine the combination of crops that will work best? What is the profitability of each crop?

Where do I market these crops? What are the requirements for selling products through various market channels? Participants will develop videos that include a mentoring component and feature farmers as speakers. Webinars, videos, and print publications will be disseminated via the Center for Crop Diversification website, as well as through the Center's newsletters and social media outlets. Research results and Extension products will also be disseminated via field days and meetings in participating states. All products will include credits for all contributors and the institutions they represent.

Objective 3: The Center for Crop Diversification has begun the process of expanding its farm market and produce auction price reports by working with faculty and Extension personnel to add farmers market price reports from Tennessee, and farmers market and produce auction price reports from Illinois. The Center will work with participants from other states involved in this project to further expand farmers market price reporting. The group will seek funding to develop an app to expedite expanded reporting. The Center will coordinate addition of produce auction, farm to school, and retail price reports from the participating states. Opportunities to explore specific applied price analysis research with a view toward local farm benefits will be pursued.

Objective 4: Agricultural economists in the participating states will develop surveys to determine consumer preferences and marketing channels that are most effective and profitable for small farms in the region. Output from this applied research will be shared with SERA project participants to coordinate with their specialty crop production research. The project will include development of a regional produce planting intentions and production research needs assessment survey from farmers, and development of a report on the economic impact of specialty crop production across the region. Exploration into local (and other means of differentiation suitable for small farms) produce demand will explore those utilized in market research by Holcomb et al (2018), Kilduff and Treagle (2022), Lusk (2018), and Onozaka, Y., & McFadden, D. T. (2011).

Expected Outcomes and Impacts

The following outcomes and impacts are to be pursued through the course of the approved project covering four years. Annual reporting would address progress for each of the items noted below, as well as against the four objectives stated above.

- Facilitated coordination of research and Extension activities in regard to crop diversification throughout the participating states.
- An inventory of the resources currently available within the group, including applied research on crops and production systems, as well as marketing research. The inventory and a searchable contact list of project participants who have expertise with various crops will be collated on the Center for Crop Diversification website.
- Production research focused on the new crops and production systems will permit development of recommendations for management practices that lead to profitable production of high quality produce in an environmentally sound manner. Results of marketing research will aid farmers in determining the most appropriate channels for selling their products.

- This activity will allow for exchange of ideas and information among researchers and Extension personnel in the participating states, and will result in publication of journal articles and fact sheets based on production and marketing research.
- Development of webinars and videos to help farmers throughout the region diversify their operations.
- This activity is expected to result in increasing incomes among small farmers in the region, fulfilling the needs of consumers seeking to increase their purchases of local foods. In the longer term, we expect the region's capacity for producing and marketing produce to increase, thereby reducing reliance on a few areas of concentrated production.
- Price information gathered from farmers markets, produce auctions, farm to school programs, and food retailers will help farmers determine how to price their products.
- Expanded price reporting resulting from this project will help fulfill the need for direct market prices for the Noninsured Crop Disaster Assistance Program (NAP).
- A regional produce planting intentions survey, which will allow for documentation of how production and marketing of produce is changing in the region.

Educational Plan

Farmers and Extension personnel in the participating states will be informed of the activities of this project via a website, which will be built around the online resources of the Center for Crop Diversification at the University of Kentucky; through webinars, both live and archived, on topics related to the production and marketing research that this project encompasses; through videos featuring farmers who have successfully diversified their operations; and through fact sheets, which will be disseminated at field days and meetings in the participating states. Webinars will be promoted to county Extension offices in all states to allow farmers who do not have high-speed Internet access to participate. To increase access by underserved communities, project participants will disseminate information at field days and meetings at 1890 Land Grant universities in the region. USDA/NRCS personnel will specifically be included, as the project outcomes may have some bearing on small farms, diversification, and future EQIP programs. Educational sessions will also be offered at produce auctions in the region to address the needs of Amish and Mennonite growers.

Organization/Governance

A chairman and vice chairman for the proposed group will be selected on an annual basis. The group will have a formal meeting annually to be held at a mutually agreed upon time and location. Additional meetings, face-to-face or virtual, may be held on an as-needed basis to facilitate collaborative research and Extension activities of the group.

Literature Cited

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