

Title: Crop diversification opportunities to enhance the viability of small farms

Statement of Issues and Justification

Agricultural production is a vital part of the economy of Kentucky and other states across the U.S. 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 project¹ are home to 533,620 small farms that have annual gross sales of less than \$250,000 (USDA NASS Agricultural Statistics 2017). Increasing development of direct marketing channels, including dramatic growth in the number of farmers markets and growth of farm to school programs, provides small farmers with 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. The High Tunnel System Initiative (formerly the Seasonal High Tunnel Initiative) within the USDA-NRCS Environmental Quality Incentives Program (EQIP) offers financial assistance to growers interested in pursuing high tunnel production. Since the program began in Kentucky in 2012, approximately 900 high tunnels have been built, with 200 more under contract (personal communication, November 2018). The situation is similar in other states; since 2012, approximately 3,950 high tunnels have been built or are planned through EQIP and similar programs in Delaware, Illinois, Indiana, Iowa, Minnesota, North Carolina, Ohio, Tennessee, Utah, Washington and West Virginia (personal communication, November, December, 2018, January, August, September, 2019). Stakeholders looking for crop diversification information include farmers interested in both field and high tunnel production of horticulture crops; extension agents, specialists, and associates; NRCS professionals; FFA instructors; and others who advise producers. The Center for Crop Diversification (CCD) at the University of Kentucky conducted a survey in June 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 growers with questions about specialty crops. The SERA 45 group has successfully collaborated on price reporting, production and market research (including cover crops in high tunnels, radish variety trials, the use of Protek netting and mesotunnels, produce auction data analysis, and the economics of Fresh Stop Markets). This renewal project will build on those collaborations.

Objectives

1. Develop research-based production information about crops, systems, and production practices that have the potential to be profitable for small farms. These include a) protected agriculture (high, midsize and low tunnels, greenhouse production of specialty crops), b) organic production systems, c) small-scale production systems, and d) biodegradable mulches. Participants in three or more states will collaborate on biodegradable mulch research.
2. Coordinate research and extension activities among participants, including a) development and presentation of annual trainings, including webinars, on crop diversification topics, b)

¹ Delaware, Illinois, Indiana, Iowa, Kentucky, Minnesota, North Carolina, Ohio, Tennessee, Utah, Washington, West Virginia

development of print publications that will be made available electronically on production and marketing of specialty crops in the participating states, including a monthly update tool featuring at least one article by a project participant on a crop diversification topic, and six print publications on specific crops and production systems, and c) development of six videos illustrating production practices and marketing. Webinars, videos, and print publications will be disseminated via the CCD website (www.uky.edu/CCD/), as well as through the CCD's newsletters and social media outlets. Tennessee's Center for Profitable Agriculture (CPA) will also participate in the development and dissemination of webinars and print publications. Research results and extension products will also be disseminated via field days and meetings in participating states.

3. Develop farm market, Community Supported Agriculture (CSA), on-farm retailing and other direct market information and decision aids that can be shared regionally. These can include sampling standards, price reporting standards, merchandising education, and market performance metrics.

4. Continue market research in the participating states on consumer preferences and marketing channels that are most effective and profitable for small farms.

Procedures and Activities

Participants have drafted the following work plan as measurable activities addressing project objectives. Participants will meet face-to-face at annual project meetings to review progress on these activities, and refine as needed.

Objective 1: Participants will conduct applied research on production systems, such as protected agriculture (high, midsize and low tunnels) and organic production.

- Identification of five to 10 crops of primary interest among participants and/or lacking sufficient production data for research and grower recommendations in protected agriculture and organic production systems.
 - o Participants will identify recommendations needed for growers and researchers in their region.
 - o Participants will identify varieties based on yield data and personal experience in their region.
- Identify production systems where collaborative, interdisciplinary research is needed to address key knowledge gaps and constraints.
 - o Develop a plan to expand upon research conducted on biodegradable mulch at the University of Tennessee. Participants in Indiana, Iowa, and Kentucky have expressed interest in collaborating on production research and further evaluation of the constraints associated with the adoption of biodegradable mulch films.
 - o Develop a plan to address a need for economic analyses across crops for high, midsize, and low tunnels.

Objective 2: Participants will collaborate on trainings, including webinars, on high tunnel production, organic production, and beginning farming opportunities.

- Collaborate on one training per year via webinar or in-person on topics related to protected agriculture, organic production of specialty crops, small-scale production systems, or use of biodegradable mulch films.
- Collaborate on the development of print publications that will be made available electronically on the production and marketing of specialty crops.
 - o Begin production of a monthly update tool featuring one or two short articles

- from a project participant.
 - Distribute this tool to growers and stakeholders in their respective states.
 - Collect data from participants on distribution metrics.
- The CCD (Kentucky) will develop six crop/production system “profiles” in collaboration with the CPA (Tennessee) by July of 2020. These profiles will include a high tunnel overview; a comparison of mushroom production systems using a regional approach; and profiles on the production of cut flowers, culinary herbs, cider apples, and mums.
- Collaborate on the development of shared multimedia documentation of research and extension activities.
 - Develop a work plan for CCD to assist participants in the creation and curation of photographs and videos from events in the region to show farmers the research and extension activities being conducted by the group.
 - Share expertise in social media promotion and documentation of these events.
 - Promote group adoption of methods like using Facebook live for interviews at events that are part of this project and post recordings of the interviews on YouTube.
 - Disseminate shared resources among participating states.
 - Utilize regional resources, such as the CCD website and the CPA, for the dissemination of webinars, videos, and print publications.
 - Disseminate research results and extension products at field days and meetings in participating states.

Objective 3: Regional publications will be developed around crop/market profiles corresponding to a number of the growing direct market channels. These include farmers markets, on-farm retail, CSA, farm-to-school/institution, and direct-to-buyer. Market information sharing remains a critical need across these active but weakly measured market channels. Best practices for capturing market performance metrics will be developed and shared across the region. Prices will be collected systematically from farmers markets and produce auctions with a view toward creating season extension recommendations. The CCD will work with participants from participating states not yet conducting farmers market price reporting to help them establish a price reporting system. Tennessee has developed an app to expedite expanded price reporting and will continue testing and working to improve the app. The CCD will begin developing a streamlined price reporting system using Qualtrics in 2019. The CCD will coordinate the addition of farmers market and produce auction price reports from the participating states, and the CCD website will either host the additional reports or link to reports available from additional states. Sampling impacts have been researched previously, but new cottage food laws raise the need for revisiting this issue. Participants will meet to develop a research plan to pursue a grant to both research the issue of sampling and develop revised recommendations for implementation.

Objective 4: Some of the project participants have been exploring ways to better survey both community consumers and producers selling into these community markets to identify components of a high performing local food system. Market performance from at least 16 communities will be compared with a view toward developing stronger local food systems. Agricultural economists in the participating states will continue working on a survey to

determine consumer preferences for local food in various restaurant formats. They will also continue to develop shared surveys and data to determine consumer preferences and marketing channels that are most effective and profitable for small farms in the region – especially for farm markets, CSA, and on-farm retailing/agritourism.

Expected Outcomes and Impacts

- Facilitated coordination of research and extension activities regarding crop diversification throughout the participating states.
- An inventory of the resources available within the group, including applied research on crops and production systems, as well as marketing research, and a list of project participants who have expertise with various crops have been added to the CCD website.
- Production research focused on new crops and production systems will permit the development of recommendations for management practices that lead to the 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 the exchange of ideas and information among researchers and extension personnel in the participating states, and will result in the publication of journal articles and fact sheets based on production and marketing research.
- Development of resources to help farmers in 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 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).

Educational Plan

Farmers and extension personnel in the participating states will be informed of the activities of this project via a website, which has been built around the online resources of the CCD; through live and archived webinars on topics related to the production and marketing research; through videos featuring farmers who have successfully diversified their operations; and through fact sheets, which will be disseminated at field days/meetings. Webinars will be promoted to county extension offices to allow farmers who do not have high-speed Internet access to participate. To increase access by underserved communities, participants will disseminate resources at field days/meetings at 1890 Land Grant universities in the region. Educational sessions will be offered at produce auctions to address the needs of Amish and Mennonite growers.

Organization/Governance

A chairperson and vice-chairperson 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.

Literature Cited

U.S. Department of Agriculture. National Agricultural Statistics Service, 2017 Agricultural Statistics Annual, Chapter IX, Farm Resources, Income, and Expenses, pages 3-5.

https://www.nass.usda.gov/Publications/Ag_Statistics/2017/Chapter09.pdf