

PRODUCE DEMAND, MARKETING & POLICY



Multistate Research Fund
IMPACTS

Fruits and vegetables are popular in the U.S.

- Demand has increased in recent years with greater expectations for variety, year-round availability and local offerings (when in season).
- Fresh produce drives sales for retailers.
- Local, state, and national programs are trying to increase produce consumption because of the role it plays in preventing chronic diseases, such as obesity, heart disease, and Type 2 diabetes.

Consumer preferences for fruits and vegetables are changing.

- More consumers are seeking local, organic, pesticide-free, GMO-free, and pre-chopped produce.
- Demand for frozen produce is rising.
- Many consumers want to purchase produce directly from farmers or through coops, farmers markets, and online shopping.

The produce industry is also affected by changes in:

- Growing practices and technology
- Trade agreements, regulations, and policies
- Labor availability and affordability
- Disruptions like natural disasters, COVID-19, and foodborne illness outbreaks

Adapting to these preferences and changes is critical.

Scientists at land-grant universities nationwide are working together to explore market, production, supply chain, and policy dimensions of specialty crops and provide evidence-based recommendations with growers, policymakers, retailers, and other food system stakeholders.

Collaboration is key.

Coordinating studies improves efficiency. Working together allows researchers to share expertise, tools, facilities, and other resources, overcoming limited capacity and investment, which can be an issue for some states, institutions, or crops. Diverse expertise allows the project to tackle a wide range of issues across the entire supply chain. With members in multiple states, the project can collect thorough data and have widespread impact.

This work helps growers compete and profit and maintains a supply of safe, healthy, affordable fruits and vegetables for consumers. Resilient food systems are key to economic stability and thriving communities.



ASSESSING CONSUMER PREFERENCES

Project members quantified consumer preferences and willingness to pay for fruits and vegetables with certain traits, production strategies, and technologies. Findings have guided **breeding programs** for blueberries and grapes and encouraged the adoption of postharvest irradiation to improve the palatability of cranberries without added sugar and enhance the quality and shelf-life of apples in storage (Washington State University, Cornell University).

Researchers identified features people look for in **online grocery shopping** platforms, such as fast delivery and trained shoppers who select high-quality produce (University of Tennessee). Another study revealed how events like COVID-19 and factors such as age, gender, and location affect online shopping willingness (Rutgers University). Based on research and Extension, several producers and farmers markets in Colorado began offering online boxes and pre-orders (Colorado State University).

MARKETING & LABELING STRATEGIES

Project members explored the financial implications of using different **marketing channels** (Colorado State University) and identified effective **marketing strategies** for specialty crops, including a wide variety of fruits and vegetables, cut flowers (University of Kentucky, Utah State University), and craft beverages (Michigan State University). Other studies encouraged growers to explore **agritourism** as an additional marketing strategy and revenue stream (Pennsylvania State University).

In particular, researchers evaluated the benefits and costs--to producers and consumers--of various **labeling and certification programs** used to differentiate products, including color-coded **nutrition fact panels** to help consumers quickly and accurately assess product healthiness (University of Tennessee), labels that indicate products grown in that state (Louisiana State University and University of Kentucky), and labels that point out best management practices (University of Florida).

BUDGETING FOR SUCCESS

Project members developed **enterprise budgets**, providing growers and other supply chain stakeholders, financial institutions, and policymakers with important information for decision making. For example, enterprise budgets for nearly three dozen specialty crops helped Georgia growers make decisions and obtain loans. The budgets also helped financial institutions, farm credit bureaus, Georgia Department of Agriculture, and Congressional offices (University of Georgia). In Utah, researchers provided updates on **inflation**, input supply **shortages**, and increased input **prices** (Utah State University).

MITIGATING SHOCKS

Project members examined how shocks, including **pandemics, trade wars, natural disasters, and foodborne illness outbreaks** affect the specialty crop supply chain and consumer behavior. For example, researchers evaluated how changing weather patterns are impacting wine grape production and quality (Oregon State University). Other studies examined how wine grape growers can adjust **contracts** and **crop insurance** to mitigate the impacts of wildfires and smoke exposure (University of California, Davis). Researchers also identified practices that allowed local and regional food businesses to stay viable during the COVID-19 pandemic (USDA and Colorado State University).

ENCOURAGING NEW TOOLS & PRACTICES

To improve outcomes for the specialty crop industry and consumers, researchers assessed and recommended new tools and practices for growers, processors, and other parts of the supply chain.

Researchers completed multi-season field trials evaluating integrated **pest, weed, and disease management strategies** for specialty crop systems (University of Florida, Purdue University, University of Kentucky, and others).

In Tennessee, researchers evaluated the benefits of **alley cropping**, in which trees or shrubs are planted alongside herbaceous crops within the same production system (University of Tennessee).

To help growers overcome labor challenges and improve production efficiency, project members assessed **automated and mechanized solutions** for specialty crops (North Carolina State University, Oregon State University, Texas A&M University, University of Florida).

Researchers are exploring the feasibility of **controlled environment agriculture**. In Colorado, researchers are assessing the costs and integrating new heating strategies and governance models (Colorado State University). In Kentucky, findings resulted in significant state and private investment and new partnerships with international firms and government agencies (University of Kentucky).

Other studies identified regimens to improve **post-harvest quality and nutrient retention**.

Project members examined producer preferences related to the use of **blockchain** and **smart contracts** for specialty crops sales (Mississippi State University and Clemson University).

INFLUENCING POLICY

Project members analyzed the impacts of policies and contributed to standards and regulations for the specialty crop industry. This information:

- Supported policies for procuring local produce for **schools** and **food banks** (Ohio State University, Colorado State University, and others).
- Made **guest worker programs** more attractive and sustainable (Washington State University)
- Raised farmer understanding of various **worker visa programs** that can help them navigate labor challenges (University of Tennessee).
- Helped show the economic impact of **nutrition incentive programs** (North Carolina State University, Colorado State University, and others).
- Showed how **fuel taxes** affect shipping of agricultural products (Cornell University).

Researchers studied **public perceptions** of agricultural policies and food system politics. Surveys of over 10,000 U.S. consumers revealed perceptions toward **food prices, subsidies, inflation**, and other issues (University of Illinois and Purdue University).

EDUCATION & OUTREACH

Project members **trained Extension professionals** so they are better able to help specialty crop growers make informed decisions about production practices and marketing strategies.

To share recommendations with **growers** and **industry professionals**, project members developed and shared **workshops**, webinars, conferences, field days, and other materials and events.

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