

Arkansas Specialty Crop Profile: Vegetable and Melon Production

Leah English
Program Associate -
CARS

Brooke Anderson
Graduate Assistant,
Agricultural Economics
and Agribusiness

Jennie Popp
Area Director - CARS

Amanda McWhirt
Extension Specialist -
Fruits and Vegetable
Production

Wayne P. Miller
Professor - Community
and Economic
Development

Mike Richardson
Professor - Turfgrass
Scientist

Ronald Rainey
Extension
Economist/Professor

*Arkansas Is
Our Campus*

Visit our web site at:
<http://www.uaex.edu>

Arkansas' temperate climate allows farmers to grow a wide variety of vegetables and melons including asparagus, beans, beets, broccoli, cabbage, cantaloupes, carrots, cauliflower, celery, collards, cucumbers, eggplant, garlic, herbs, kale, lettuce, mustard greens, okra, onions, parsley, peas, peppers, potatoes, pumpkins, radishes, rhubarb, spinach, squash, sweet corn, sweet potatoes, tomatoes, turnip greens, turnips, watermelons and many more. (USDA NASS, 2014a).

For resources related to vegetable and melon production in Arkansas visit <https://www.uaex.edu/farm-ranch/crops-commercial-horticulture/horticulture/vegetables.aspx>.

Industry Overview

There are around 440 farms in Arkansas primarily involved in growing vegetables and/or melons. These farms represent around 1 percent of all farms in the state, utilizing almost 33,000 acres of land. In 2012, the average farm size for vegetable and



melon producers was 74 acres with sales values totaling more than \$36 million. Farm production expenses typically average around \$50,000 per farm with labor being the greatest production expense for vegetable and melon farmers. In 2012, more than \$4 million was expensed to pay hired farm labor. Fertilizer, lime and soil conditioners cost farmers another \$2.4 million, with supplies, repairs and maintenance costs totaling \$2.2 million (USDA NASS, 2014b).

Farms specializing in other agricultural products may produce some amount of vegetables and melons in addition to their primary crops. In 2012, vegetables and/or melons were grown on more than 625 Arkansas farms¹. Figure 1 shows the total number of farms reported to produce vegetables and melons across the state during 2012.

The Arkansas Grown program was created in 2012 to promote Arkansas agricultural products by helping to make the critical connection

¹Includes any farm reporting the harvest of any vegetables, potatoes, sweet corn or melons that were not grown under glass or other protection. This excludes home garden, personal or home use crops.

between producers and consumers. The Arkansas GROWN™ website lists around 200 vendors selling vegetables produced in Arkansas through local farms, cooperatives, restaurants and markets. Tomatoes are the most popular vegetable and melon item sold by Arkansas GROWN™ producers. Other popular products include squash, peppers, herbs, beans, cucumbers and okra (Arkansas GROWN, 2017).

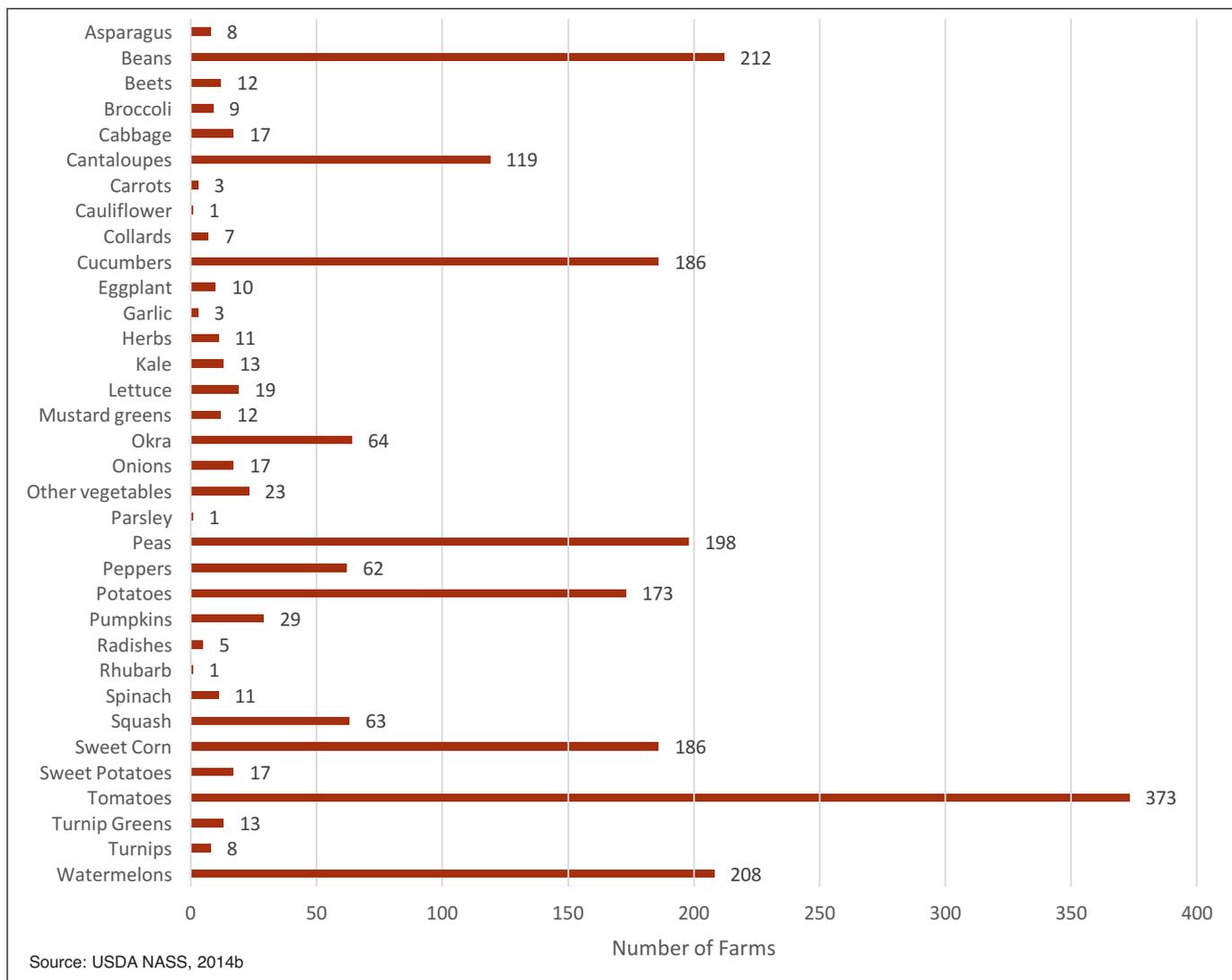
Market Maker™ is a national network of states that connect farmers and fishermen with food retailers, grocery stores, processors, caterers, chefs and consumers. The Arkansas Market

Maker™ website lists 287 businesses involved in either buying or selling vegetables and melons through their market place. Of those 287 businesses, 28 (mostly public schools) were listed as being solely buyers, with the rest selling their vegetable and melon products using the online market (Arkansas Market Maker, 2017).

A recent survey conducted by the University of Arkansas Division of Agriculture’s Center for Agricultural and Rural Sustainability (CARS) gathered information from 106 vegetable and melon producers across the state. Survey results show most (62 percent) vegetable and melon

farmers to be sole proprietors, with 22 percent being limited liability corporations, 7 percent partnerships and 4 percent corporations, one member-owned operation and one 501c3 nonprofit. These farms have been producing vegetables and/or melons for an average of 19 years. Thirty percent have been in operation for more than 20 years; the oldest farm has been in operation for over 108 years. Forty percent of farms described their production practices as conventional, with an additional 25 percent being mostly conventional². Nine percent of farms were certified organic while another 24 percent used

Figure 1. Arkansas Farms Producing Vegetables and Melons in 2012



²“Mostly conventional” refers to farms that primarily utilize conventional farming practices with occasional non-chemical or organic practices.

primarily organic practices without certification. Vegetable and melon farmers reported the use of several sales strategies, with almost half of surveyed farmers selling their products through farmers markets and 18 percent using farmers markets as their only sales avenue. Thirty-one percent of farmers utilized various types of retail markets with 20 percent selling some percentage of their products at the wholesale level. Total sales values for the surveyed vegetable and melon farms ranged between \$3 and \$3,000,000 and averaged over \$175,000 for Arkansas producers surveyed in 2014.

Industry Trends and Outlook

Although the vegetable and melon industries make up a relatively small percentage of total agricultural production in Arkansas, in terms of national production, Arkansas has consistently ranked in the top 25 states for sweet potatoes (6th), tomatoes (14th) and watermelon (14th) (USDA NASS, 2017a/b).

Since 2008, total cash receipts for Arkansas' vegetable and melon crops have averaged around \$32 million annually³ (Figure 2). The drop seen in 2009 can be attributed to a 2008 salmonella scare that was initially linked to tomatoes. A period high of almost \$53 million is seen in 2012. Growth from 2009 to 2012 comes primarily from an increase in sweet potato sales, although tomatoes and watermelons saw growth as well. After a slight drop in 2013, the cash receipt value for Arkansas vegetables and melons has remained steady, averaging around \$35.8 million.

When looking at the utilized production of individual vegetable and melon crops, watermelon

production has remained fairly consistent since 2008, with Arkansas farms producing an average of around 33,000 pounds per year. Tomato production has experienced volatility but has seen an overall increase since 2009, with production rising by almost 200 percent from 2009 to 2015. Sweet potato production increased by 68 percent from 2009 to 2012 before leveling off to an average of around 75,000 pounds per year. (Figure 3).

Yield values for watermelon and sweet potatoes have remained fairly constant since 2008. Reaching a period high of 31,000 pounds per acre in 2008, tomato yields have varied throughout the years. Heavy June rains resulted in yield losses for tomatoes in 2009. Production in 2010 rebounded, and unseasonably warm weather in the spring of 2012 allowed early production and increased yields for that year. In 2013, unseasonably cool weather reduced the season

Figure 2. Cash Receipt Value for Arkansas Vegetables and Melons,* 2008-2015

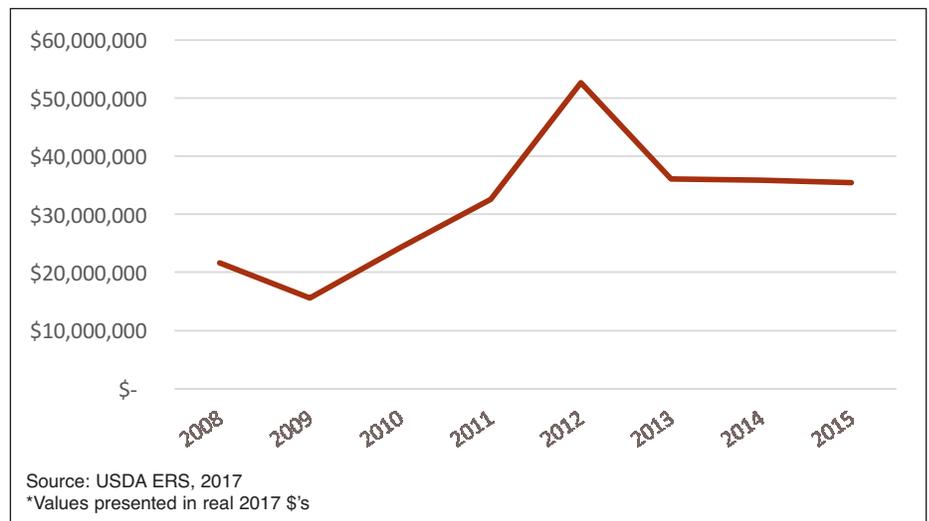
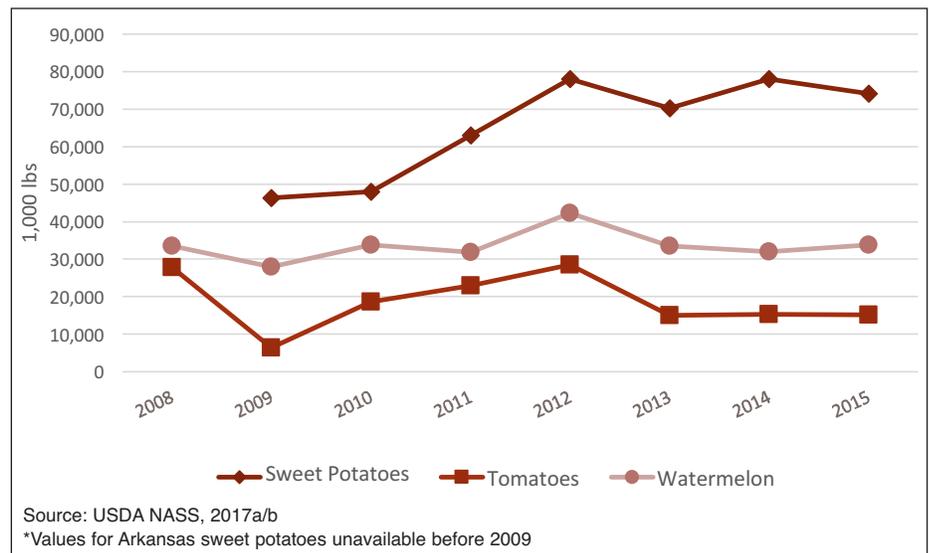


Figure 3. Utilized Production of Arkansas Vegetables and Melons*, 2008-2015



³Annual production and value data are unavailable for most specialty crops in Arkansas; therefore, the estimates are drawn from the summed totals for snap beans, tomatoes, watermelon and sweet potatoes (when available).

length, resulting in decreased yields and sales (Figure 4).

Looking at available price data for Arkansas vegetables and melons, tomatoes consistently capture the highest value with a period average price of \$0.58 per pound. Watermelon prices have seen an overall increase since 2008, rising 115 percent by 2015. Sweet potato prices have also increased, rising 146 percent from 2009 to 2013 before falling slightly to \$0.29 per pound by 2015⁴ (Figure 5).

Industry Issues

While pests and disease are a common concern for vegetable and melon producers in the state, more than half of all vegetable problems are related to an unfavorable environment. Vegetables exposed to environmental stress are more susceptible to disease and insect attack. Diseases range from those caused by living organisms such as fungi, bacteria, viruses or nematodes to noninfectious

diseases caused by factors such as temperature, humidity, nutrient deficiency/toxicity and plant damage.

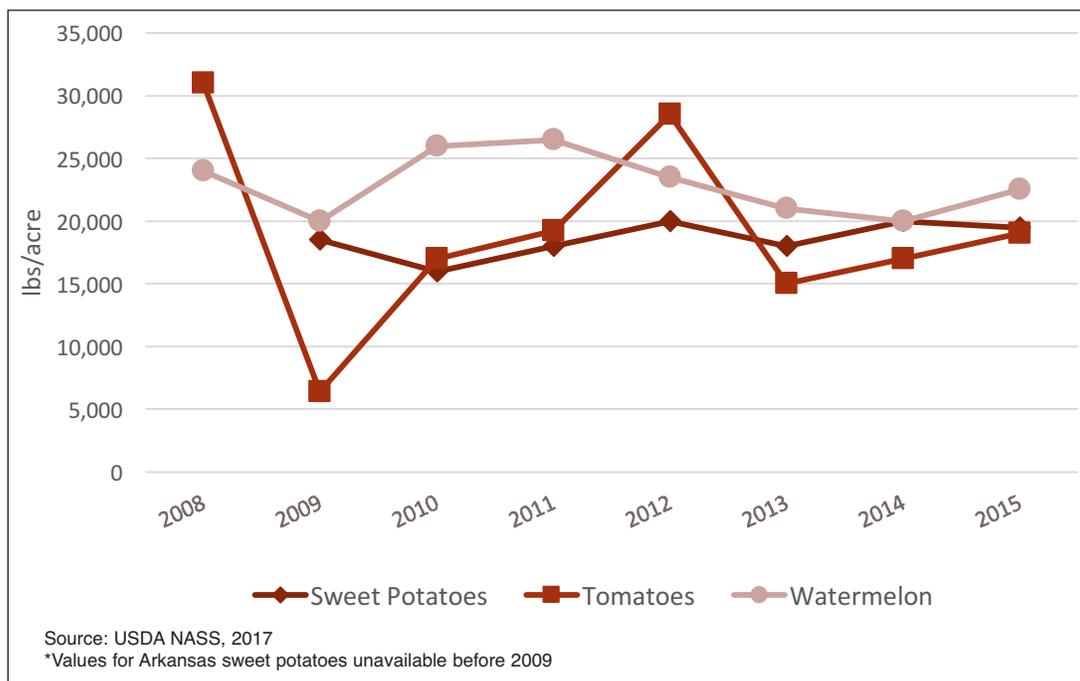
Late blight is a devastating fungal disease primarily known for infecting potatoes and tomatoes. In 2016, as a result of heavy spring rains, tomato producers in more than 14 Arkansas counties reported evidence of late blight occurring in their crops. The disease affects the foliage and fruit, causing rapid death of the plant. Application of fungicide sprays are recommended to help prevent the spread of this disease (Miller, 2016). To learn more about common vegetable diseases in Arkansas and to download the most recent Arkansas Plant Disease Control Products Guide visit <https://www.uaex.edu/farm-ranch/pest-management/plant-disease/vegetables.aspx>.

In the recent CARS survey, more than half of responding producers expressed concern in regard to their ability to generate

profits through their operations. A major issue impacting the profitability of vegetable and melon production is the seasonality and perishability of these crops. Products intended for fresh market consumption must be transported and sold within a limited distance and/or timeframe. Increased imports have resulted in the year-round availability of many produce items which has impacted the ability of domestic producers to compete against foreign operations that have access to cheaper labor.

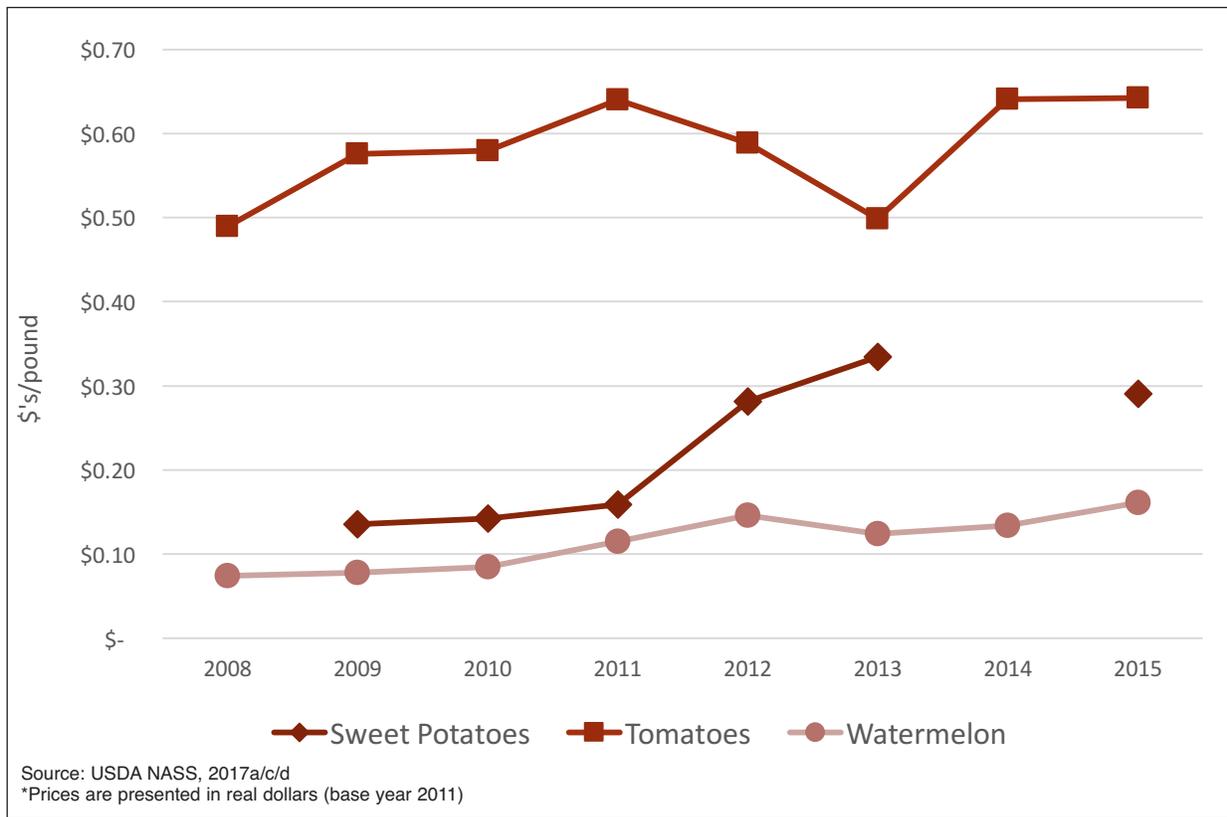
Survey respondents also identified government regulations and labor issues as important challenges to their businesses. In addition to laws concerning food handling and safety, laws regarding immigration and foreign workers may also impact the success of domestic vegetable and melon producers. Upon harvest, these products are often sold through fresh markets where consumers tend to purchase items based upon aesthetic appeal.

Figure 4: Average Yields for Arkansas Vegetables and Melons*, 2008-2015



⁴Due to lack of reporting and nondisclosure, price data for Arkansas sweet potatoes are unavailable prior to 2009 and for the year 2014.

Figure 5: Prices Received for Arkansas Vegetables and Melons*, 2008-2015



Because of this, produce intended for fresh market is typically hand-picked to avoid any superficial bruising. For fresh market producers, labor tends to be the largest variable expense, raising the total cost of production. Without access to affordable labor, domestic producers face hardships maintaining their competitive ability against foreign competition.

Value added practices such as the production of processed goods may ease some of the competitive pressure experienced by rural farmers. Vegetable and melon products unsuitable for fresh market sales can be processed into other goods such as sauces, salsas,

pickled items, etc., helping to boost sales and decrease waste.

Industry Spotlight

Cave City is an Arkansas town that's well-known for watermelon production. Arbra Perkey of Perkey and Wooldridge Farms is one of several Cave Springs registered watermelon growers. According to Arbra, the watermelon tradition has run in his family for generations and is rooted in the legend that Cave City grows "the world's sweetest watermelons." Although Arbra grows a few other vegetables, his main focus is to grow high quality watermelon and cantaloupe. The

farm consists of 12 to 13 acres of watermelon and 2 to 3 acres of cantaloupe with about half of their yield being sold at the local market. The other half is shipped out of state with orders being sent all over the country. Due to high demand, they typically sell all they are able to produce without a problem. In recent years, Arbra has noticed a lack of interest in farming from the younger generations and sees this as a challenge for specialty crop production in Arkansas. With no lack of demand for fresh fruits and vegetables, Arbra believes there is still a large potential for growth for anyone willing to take on the challenge.

Sources

Arkansas GROWN. 2017. <http://www.arkansasgrown.org/>. Accessed 31 October 2017.

Arkansas Market Maker. 2017. <https://ar.foodmarketmaker.com/>. Accessed 31 October 2017.

Miller, F. 2016. Late blight hitting Arkansas tomatoes early. University of Arkansas System Division of Agriculture, Cooperative Extension Service. <https://www.uaex.edu/media-resources/news/june2016/06-21-2016-Ark-late-blight-tomatoes.aspx>. Accessed: 2 November 2017.

USDA ERS (U.S. Department of Agriculture Economic Research Service). 2017. Cash receipts by commodity. <https://data.ers.usda.gov/reports.aspx?ID=17845>. Accessed: 2 November 2017.

USDA NASS (U.S. Department of Agriculture National Agricultural Statistics Service). 2014a. *2012 Census of Agriculture: Arkansas State and County Data*. Table 38: Vegetables, Potatoes, and Melons Harvested for Sale: 2012 and 2007. https://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1,_Chapter_1_State_Level/Arkansas/st05_1_038_038.pdf. Accessed: 31 October 2017.

USDA NASS (U.S. Department of Agriculture National Agricultural Statistics Service). 2014b. *2012 Census of Agriculture: Arkansas State and County Data*. Table 68: Summary by North American Industry Classification System. https://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1,_Chapter_1_State_Level/Arkansas/st05_1_068_068.pdf. Accessed: 31 October 2017.

USDA NASS (U.S. Department of Agriculture National Agricultural Statistics Service). 2017a. *Vegetables Annual Summary*. ISSN: 0884-6413. <http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1183>. Accessed: 31 October 2017.

USDA NASS (U.S. Department of Agriculture National Agricultural Statistics Service). 2017b. *Crop Production Annual Summary*. ISSN: 1057-7823. <http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1047>. Accessed: 2 November 2017.

USDA NASS (U.S. Department of Agriculture National Agricultural Statistics Service). 2017c. *Crop Values Annual Summary*. ISSN: 1949-0372. <http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1050>. Accessed: 2 November 2017.

USDA NASS (U.S. Department of Agriculture National Agricultural Statistics Service). 2017d. *Quick Stats: Vegetable Totals – Index for Price Received, 2011*. <https://quickstats.nass.usda.gov/results/81853E98-50EE-3500-90DD-C5082C9D9077>. Accessed: 2 November 2017.

This project was supported by the Specialty Crop Block Grant Program at the U.S. Department of Agriculture (USDA) through grant 14SCBGP0005. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the USDA.

Printed by University of Arkansas Cooperative Extension Service Printing Services.

LEAH ENGLISH is a program associate with the Center for Agricultural and Rural Sustainability, University of Arkansas System Division of Agriculture. **BROOKE ANDERSON** is a graduate assistant with the Agricultural Economics and Agribusiness Department of the University of Arkansas. **DR. JENNIE POPP** is area director of the Center for Agricultural and Rural Sustainability. English, Anderson and Popp are located in Fayetteville. **DR. AMANDA MCWHIRT** is an extension specialist - fruits and vegetable production. **WAYNE MILLER** is a professor and extension economist for community and economic development. **DR. MIKE RICHARDSON** is a professor - turfgrass scientist. **DR. RON RAINEY** is an extension economist/professor. McWhirt, Miller, Richardson and Rainey are with the University of Arkansas System Division of Agriculture with McWhirt, Miller and Rainey located in Little Rock and Richardson located in Fayetteville.

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Director, Cooperative Extension Service, University of Arkansas. The University of Arkansas System Division of Agriculture offers all its Extension and Research programs and services without regard to race, color, sex, gender identity, sexual orientation, national origin, religion, age, disability, marital or veteran status, genetic information, or any other legally protected status, and is an Affirmative Action/Equal Opportunity Employer.

FSA48-PD-12-2017N