

Arkansas Specialty Crop Profile: Nursery and Greenhouse Industries

Leah English
Program Associate -
CARS

Brooke Anderson
Graduate Assistant,
Agricultural Economics
and Agribusiness

Jennie Popp
Area Director - CARS

James Robbins
Extension Specialist/
Professor, Horticulture

Wayne P. Miller
Professor - Community
and Economic
Development

Mike Richardson
Professor - Turfgrass
Scientist

Ronald Rainey
Extension
Economist/Professor

Arkansas' temperate climate allows farmers to grow a wide variety of seasonal specialty crops across the state. In addition to food crops, Arkansas farmers also grow and sell ornamental products. While Arkansas' climate is conducive for seasonal growing, some farmers use controlled environment methods such as high tunnels and greenhouses to extend their growing season or to produce various fruits, vegetables, ornamentals and seedlings year-round.

This fact sheet contains information about Arkansas' ornamental and greenhouse sector¹. As referenced in the U.S. Department of Agriculture's Census of Horticultural Specialties report, the North American Industry Classification System (NAICS) defines this sector as nursery stock, shrubbery, flower seeds and plants, foliage plants, bulbs, cultivated florist greens, mushrooms, short-rotation woody crops, Christmas trees, aquatic plants, cuttings, plug seedlings, liners, tissue-cultured plantlets, prefinished plants, sod grown under cover and/or in the open and food crops grown under protection. However, to maintain continuity between reports, the USDA horticultural specialty studies exclude



Nursery production of azaleas.

the mushroom industry, while capturing vegetable seed and vegetable transplant operations, which are not considered horticultural operations under the NAICS classification. The USDA Census of Horticultural Specialties is a primary source of data for this fact sheet; therefore, the USDA definition of horticultural specialties is used throughout to represent Arkansas' overall ornamental and greenhouse sector (USDA NASS, 2015).

Industry Overview

In 2014, Arkansas supported 104 ornamental and/or greenhouse operations², generating \$34.4 million in sales. In 2014, more than 40 percent of Arkansas' ornamental and greenhouse operations produced

*Arkansas Is
Our Campus*

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

¹The USDA refers to this as the "horticultural specialty crop sector." To avoid confusion with the overall specialty crop sector, the horticultural specialty crop sector is referred to as the "ornamental and greenhouse sector" throughout this publication.

²The 2012 Census of Agriculture reports 286 farms classified as nursery, greenhouse, floriculture and sod farms, with total sales of \$41.8 million (USDA NASS, 2014). These values vary from the ones presented in this fact sheet because the sales threshold to be counted in the 2012 Census was lower at \$1,000 in sales, as opposed to the \$10,000 sales threshold for the 2014 Census of Horticultural Specialties, the primary source for data used in this publication.



Greenhouse production of bedding plants.

floriculture products, resulting in more than \$21.6 million in sales. The floriculture industry includes operations producing annual bedding/garden plants, potted herbaceous perennial plants, potted flowering plants for indoor or patio use, foliage plants for indoor or patio use, cut flowers and cultivated cut greens. Sales from these industries represented almost 63 percent of Arkansas' ornamental and greenhouse sales for 2014.

Another major ornamental and greenhouse industry in Arkansas was the sod industry³. This industry represented 22 percent of all ornamental and greenhouse operations in the state, generating more than \$8.0 million in sales in 2014. Other Arkansas ornamental and greenhouse operations produced nursery stock, cut Christmas trees, food crops grown under protection, other miscellaneous operations and vegetable seeds (Figure 1).

Some Arkansas growers utilize glass or other protective covering in the production of their crops. Figure 2 shows a breakdown of Arkansas crops grown under protective covering during 2012.

Utilizing over 2 million square feet of growing space, bedding and garden plants were the largest group of plants grown under protective covering in the state. This was followed by potted flowering plants and nursery stock crops. Tomatoes were the most common food crop to be grown under protective covering, encompassing more than 78,000 square feet of covered grow area (Figure 2).



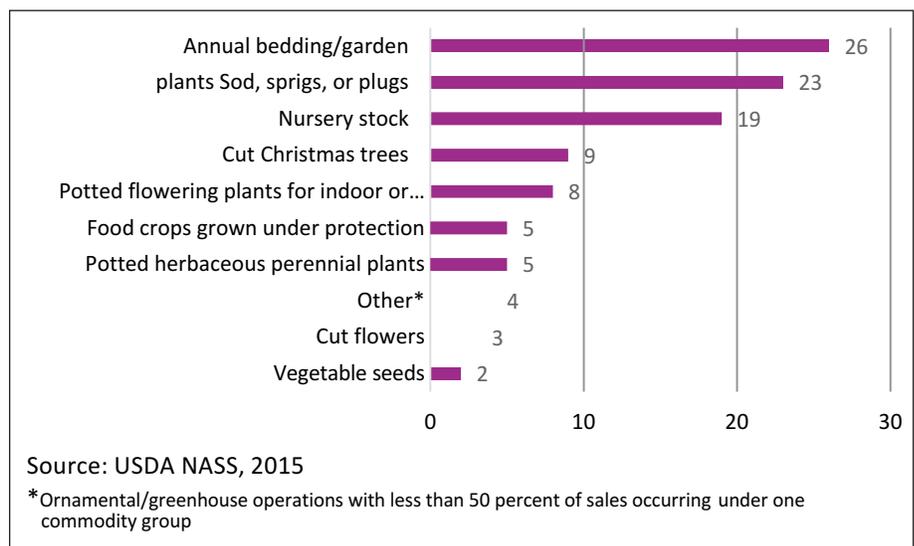
Greenhouse-grown tomatoes and other vegetables.

In 2014, Arkansas' ornamental and greenhouse operations reported making \$34.4 million in sales with 72 percent (\$24.7 million) coming from wholesale sales and 28 percent (\$9.6 million) from retail sales.

While almost 9 percent of operations reported making more than \$1 million in sales during 2014, more than half made less than \$100,000, with 21 percent reporting sales between \$10,000 and \$19,999. When compared to the U.S. as a whole, the distribution of Arkansas' ornamental and greenhouse operations by class showed some similarities but tended to vary slightly from class to class. The most notable differences were seen in the percentage of operations with sales of \$250,000 to \$499,999 and those with sales of \$10,000 to \$19,999, where Arkansas held a significantly greater proportion (Figure 3).

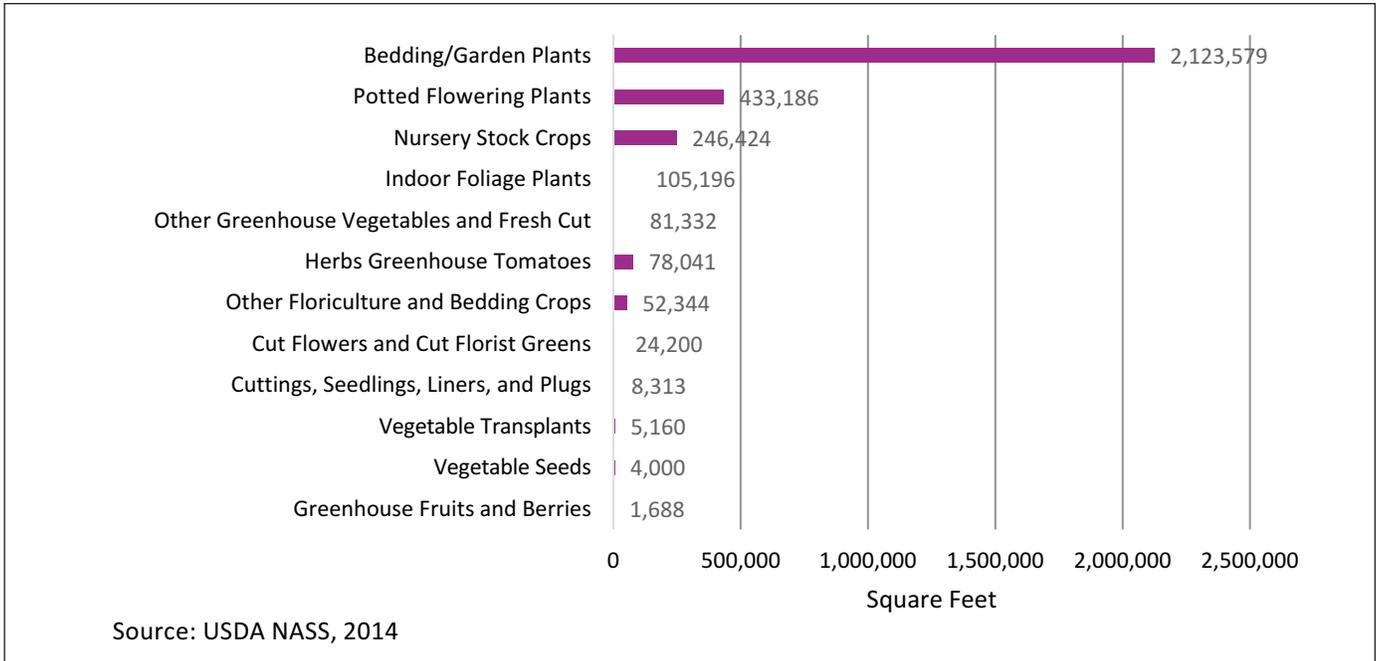
The Arkansas Grown program was created in 2012 to promote agricultural products grown in Arkansas by helping to make the critical connection between producers and consumers. The [Arkansas GROWN™](#) website lists several vendors selling horticultural specialty crops produced in Arkansas through local farms, cooperatives, restaurants and markets. Listed by more than 120 vendors, flowers are the most popular horticultural specialty

Figure 1. Arkansas Ornamental and Greenhouse Operations by Industry, 2014



³This industry is covered in more detail in the fact sheet titled Arkansas Specialty Crop Profile: Turfgrass Production and Golf Course Management.

Figure 2. Arkansas Crops Grown Under Glass or Other Protective Covering, 2012

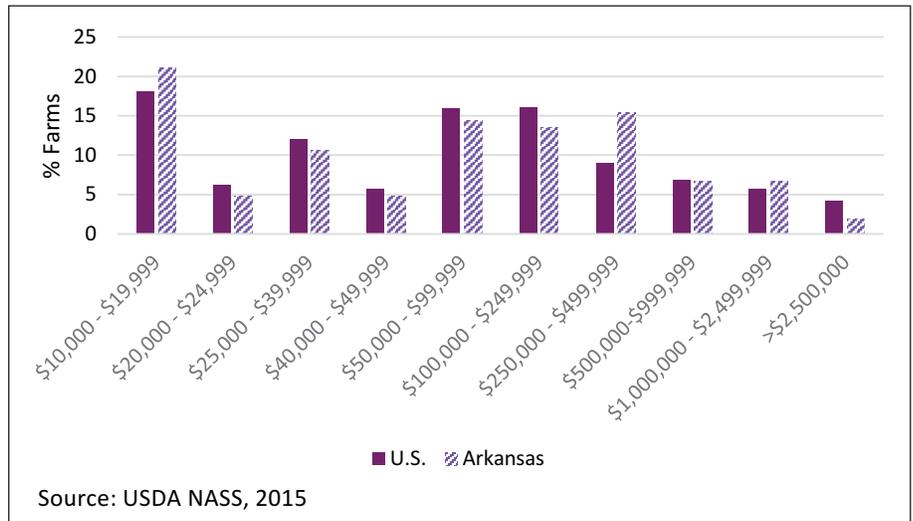


item sold by current Arkansas GROWN™ producers. The site also lists around 50 sellers of annuals or perennials and around 30 sellers of ornamental or nursery items. Customers can find local vendors selling other horticultural specialty crops such as seeds, grasses, Christmas trees, shrubs, vines and ferns through the site (Arkansas GROWN, 2017).

A recent survey conducted by the University of Arkansas System Division of Agriculture’s Center for Agricultural and Rural Sustainability (CARS) gathered information from 112 ornamental and greenhouse businesses across the state. These businesses included not only those involved in the production of horticultural specialty crops but also retail and service firms.

Of the businesses surveyed, 41 percent were reported to be corporations. An additional 31 percent of firms reported being sole proprietorships, 26 percent were limited liability corporations, 1 percent partnerships and 1 percent other. These companies have been producing ornamental and/or greenhouse products for an average of 17 years. Firms involved

Figure 3. Ornamental and Greenhouse Industry by Sales Class, 2014



with sales and services have been operating for an average of 24 and 19 years, respectively. Thirty-eight percent of producers have been in operation for more than 20 years.

For sales and service firms, around 50 percent reported operating for more than 20 years, with one sales firm operating for more than 75. Total sales values for the surveyed ornamental and greenhouse firms ranged from \$100 to almost \$6 million, averaging around \$465,000 in 2014.

Almost 60 percent of businesses reported a rise in sales between 2013 and 2014. These firms employed a total of 348 full-time and 283 part-time workers in 2014, paying more than \$9.5 million in wages and salaries. Of this value, roughly 41 percent was devoted to sales wages, 33 percent to service wages and 26 percent to production wages.

Industry Trends and Outlook

Trends in the Arkansas' ornamental and greenhouse industry followed those seen with the U.S. as a whole. In Arkansas, the industry showed steady growth throughout the 1970s and 1980s, with sales increasing by almost 100 percent from 1970 to 1988. Throughout the 1990s, the U.S. saw unprecedented income growth and economic prosperity. Although spending on cut flowers fell substantially during this time, demand for floriculture and nursery crops grew as the growth and prosperity spilled over to the ornamental and greenhouse industry (Reid, 2005).

Between 1988 and 1998, industry sales rose 186 percent from \$18.2 million to \$52.1 million, before falling 29 percent from the high in 1998 to \$37.1 million by 2009. The drop from 1998 to 2009 is likely a result of the Great Recession that began in late 2007. Spurred by the collapse of the U.S. housing market, the recession led to lower demand for ornamental and greenhouse products.

As of 2014, the sector had yet to recover, with sales dropping an additional 7 percent from 2009 (Figure 4). The industry appeared to rebound during 2015, showing potential for continued growth throughout 2016 (Hall, 2016).

The distribution of Arkansas' ornamental and greenhouse sales between wholesale and retail markets remained fairly steady from 1970 to 2014. Throughout this period, the average share of wholesale ornamental and greenhouse sales was 72 percent with an accompanying average retail share of 28 percent (Figure 5).

Although Arkansas' sales trends appear to follow those of the overall United States, the distribution of these sales between wholesale and retail markets shows a notable difference. The

Figure 4. Arkansas Ornamental and Greenhouse Sales*, 1970-2014

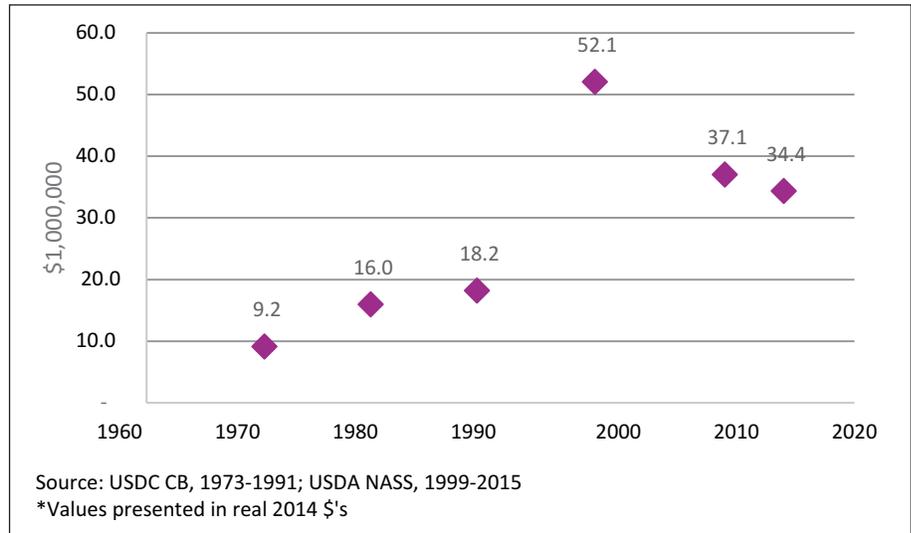
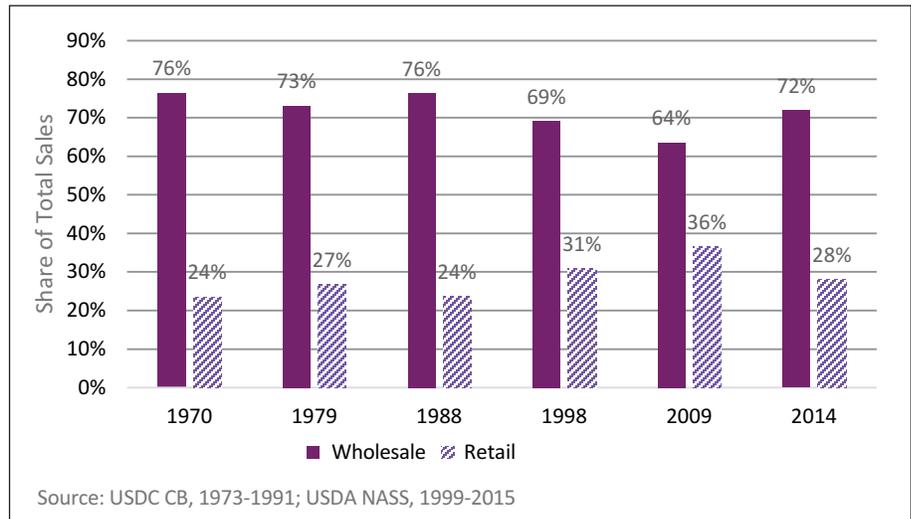


Figure 5. Share of Arkansas Wholesale Versus Retail Sales, 2014



proportion of ornamental and greenhouse value coming from retail sales is consistently higher for Arkansas than the U.S. as a whole. While the share of U.S. retail sales has declined since the 1970s, the share of retail sales for Arkansas ornamental and greenhouse producers has trended slightly upward (Figure 6).

Industry Issues

The ornamental and greenhouse industries experienced some turbulence following the Great Recession of 2008, but after several years of solid revenues, growers are optimistic toward future growth. Although sales in some markets, such as greenhouse

edibles, seem to be reaching plateaus, improved marketing efforts and labor recruitment strategies may help growers to maintain revenues and profits (*Greenhouse Management*, 2017).

In the recent CARS survey of Arkansas ornamental and greenhouse businesses, more than half of those responding expressed concern regarding the ability to generate profits through their operations. In the survey, 96 percent of respondents reported input costs as a major challenge facing their businesses. Of these inputs, labor was identified as a leading concern, both in terms of cost and in acquiring/retaining an adequate work force. The concern

Figure 6. Share of Retail Ornamental and Greenhouse Sales for the U.S. and Arkansas

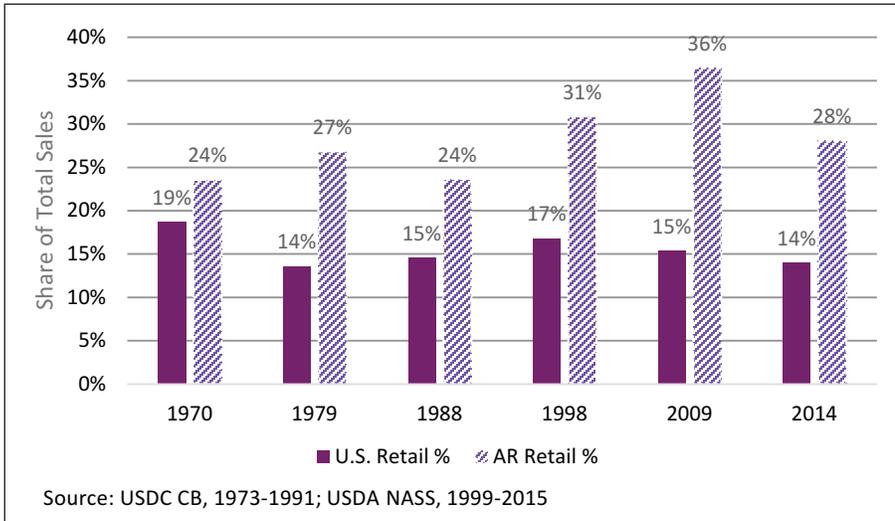
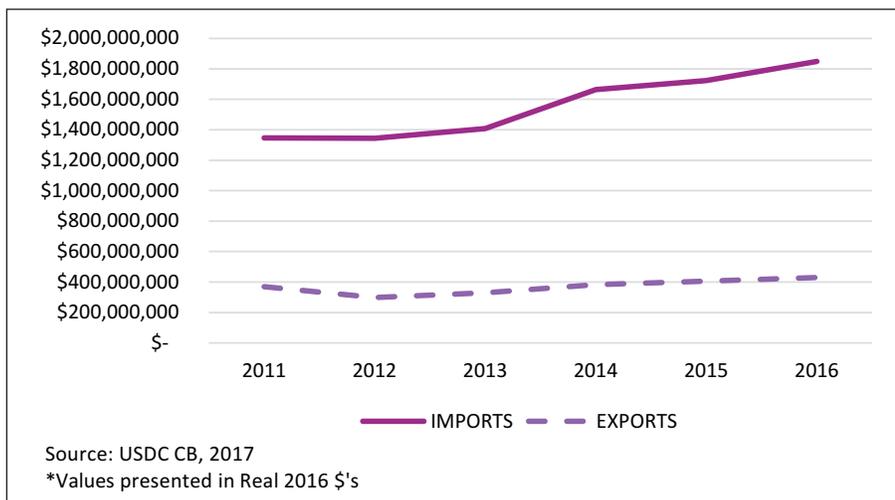


Figure 7. U.S. Imports and Exports of Ornamental and Greenhouse Products



among Arkansas' ornamental and greenhouse firms regarding labor issues seems to mirror the broader U.S. industry. According to a nationwide survey of greenhouse growers conducted in 2017, labor cost and availability of educated, qualified workers was an enormous concern for growers across the U.S. (*Greenhouse Management*, 2017).

Without access to affordable labor, domestic producers face hardships maintaining their competitive ability against foreign competition. In 2016, U.S. companies imported almost \$2.1 billion worth of ornamental plant seeds, cuttings, bulbs, plants, cut flowers and foliage, only exporting around \$0.47 billion worth of these same products. While the U.S. export

value of ornamental products grew slightly from 2011 to 2016, import growth was more than double what was seen with exports over the same period (Figure 7).

Industry Spotlight

Nestled in the Ozark Mountains of Northwest Arkansas, Val and Jana Eylands of Ozark All Seasons have been bringing fresh produce to local residents and chefs since 2013.

After establishing a successful hydroponic facility on the western Caribbean island of Roatan in 1999, the Eylands relocated to Northwest Arkansas in 2012 with the goal of designing their own energy-efficient prototype greenhouse. The result was a state-of-the-art geothermal/solar greenhouse, using hydroponic production systems to grow high-quality lettuce, salad, basil and micro-greens year-round.

To keep up with demand, the Eylands have since added three additional greenhouses and worked in collaboration with the University of Arkansas to offer internships for students wanting to learn more about greenhouse management and hydroponic food production. With their farm, the Eylands hope to play a small role in a worldwide agricultural revolution that aims to provide sustainably produced, nutrient-rich food to local consumers.

For more information related to ornamental and greenhouse production in Arkansas visit <https://www.uaexuada.edu/farm-ranch/crops-commercial-horticulture/horticulture/ornamentals.aspx>.

Sources

Arkansas GROWN. 2017. <http://www.arkansasgrown.org/>. Accessed: 8 December 2017.

Greenhouse Grower. 2016. 2016 State of the Industry Whitepaper. *Greenhouse Grower*. <http://files.greenhousegrower.com/pdf/2016/2016-SOI-Whitepaper.pdf>. Accessed: 14 December 2017.

Greenhouse Management. 2017. Striking a balance: state of the industry report 2017. *Greenhouse Management*. October 2017. <http://magazine.greenhousemag.com/issue/october-2017>. Accessed: 14 December 2017.

(Continued)

Hall, C. 2016. Greenhouse industry is set for continued growth in 2016. *Greenhouse Grower*. <http://www.greenhousegrower.com/management/green-industry-is-set-for-continued-growth-in-2016/>. Accessed: 14 December 2017.

Reid, M.S. 2005. Trends in Flower Marketing and Postharvest Handling in the United States. *Proc. VIIIth IS Postharvest Phys. Ornamentals*. Eds. N. Marissen et al. Acta Hort. 669, ISHS 2005. <http://ucce.ucdavis.edu/files/datastore/234-917.pdf>. Accessed: 14 December 2017.

USDA NASS (U.S. Department of Agriculture National Agricultural Statistics Service). 1999. 1997 Census of Agriculture: Census of Horticultural Specialties (1998). <http://usda.mannlib.cornell.edu/usda/AgCensusImages/1997/03/04/1997-03-04.pdf>. Accessed: 7 December 2017.

USDA NASS (U.S. Department of Agriculture National Agricultural Statistics Service). 2010. 2007 Census of Agriculture: Census of Horticultural Specialties (2007). AC-07-SS-3. https://www.agcensus.usda.gov/Publications/2007/Online_Highlights/Census_of_Horticulture_Specialties/HORTIC.pdf. Accessed: 7 December 2017.

USDA NASS (U.S. Department of Agriculture National Agricultural Statistics Service). 2014. 2012 Census of Agriculture: Arkansas State and County Data. Table 34: Nursery, Greenhouse, Floriculture, Sod, Mushrooms, Vegetable Seeds, and Propagative Materials Grown for Sale: 2012 and 2007. https://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1_Chapter_2_US_State_Level/st99_2_034_034.pdf. Accessed: 8 December 2017.

USDA NASS (U.S. Department of Agriculture National Agricultural Statistics Service). 2015. 2012 Census of Agriculture: Census of Horticultural Specialties (2014). AC-12-SS-3. https://www.agcensus.usda.gov/Publications/2012/Online_Resources/Census_of_Horticulture_Specialties/. Accessed: 7 December 2017.

USDA NASS (U.S. Department of Agriculture National Agricultural Statistics Service). 2017. Quick Stats: Commodity totals – index for price received, 1910-1914. <https://quickstats.nass.usda.gov>. Accessed: 14 December 2017.

USDC CB (U.S. Department of Commerce, Bureau of the Census). 1973. 1969 Census of Agriculture: Horticultural Specialties. http://agcensus.mannlib.cornell.edu/AgCensus/getVolumeTwoPart.do?volnum=5&year=1969&part_id=348&number=10&title=Horticultural%20Specialties. Accessed: 7 December 2017.

USDC CB (U.S. Department of Commerce, Bureau of the Census). 1982. 1978 Census of Agriculture: 1979 Census of Horticultural Specialties. AC78-SR-7. http://agcensus.mannlib.cornell.edu/AgCensus/getVolumeTwoPart.do?volnum=5&year=1978&part_id=198&number=7&title=1979%20Census%20of%20Horticultural%20Specialties. Accessed: 7 December 2017.

USDC CB (U.S. Department of Commerce, Bureau of the Census). 1991. 1987 Census of Agriculture: Census of Horticultural Specialties (1988). [http://agcensus.mannlib.cornell.edu/AgCensus/getVolumeTwoPart.do?volnum=3&year=1987&part_id=127&number=3&title=Census%20of%20Horticultural%20Specialties%20\(1988\)](http://agcensus.mannlib.cornell.edu/AgCensus/getVolumeTwoPart.do?volnum=3&year=1987&part_id=127&number=3&title=Census%20of%20Horticultural%20Specialties%20(1988)). Accessed: 7 December 2017.

USDC CB (U.S. Department of Commerce, Bureau of the Census). 2017. NAICS Related Party Database. <https://relatedparty.ftd.census.gov/>. Accessed: 14 December 2017.

This project was supported by the Specialty Crop Block Grant Program at the U.S. Department of Agriculture (USDA) through grant 14SCBGPAR0005. 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. JAMES ROBBINS** is an extension specialist/professor, horticulture. **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. Robbins, Miller, Richardson and Rainey are with the University of Arkansas System Division of Agriculture with Robbins, 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.