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Arkansas Specialty Crop Profile: Fruit and Nut Production

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Arkansas' temperate climate allows farmers to grow a wide variety of both native and non-native fruits and berries including apples, apricots, blackberries, blueberries, cherries, citrus, figs, grapes, nectarines, peaches, pears, persimmons, plums, raspberries and strawberries. Nut varieties produced in Arkansas include hazelnuts, peanuts, pecans and walnuts (USDA NASS, 2014a).

Researchers at the University of Arkansas System's Division of Agriculture Technology Commercialization Office (TCO) have developed and patented several fruit cultivars suited to the state's climate. These include several varieties of grapes, blackberries, peaches, nectarines and blueberries. With rising temperatures and milder winters, it may be possible to one day grow some tropical fruits in protected structures in Arkansas such as bananas, citrus, papaya, pineapple or passion fruit (McDonald, 2011).

Passion, a table grape variety developed by the University of Arkansas System Division of Agriculture Fruit Breeding Program.

A sampling of Arkansas-grown pecans.

To learn more about the University of Arkansas' patented fruit cultivars, or to obtain information on commercial growing of fruits and nuts in Arkansas visit https://www.uaex.uada.edu/farm-ranch/crops-commercial-horticulture/horticulture/commercial-fruit-production/.

Industry Overview

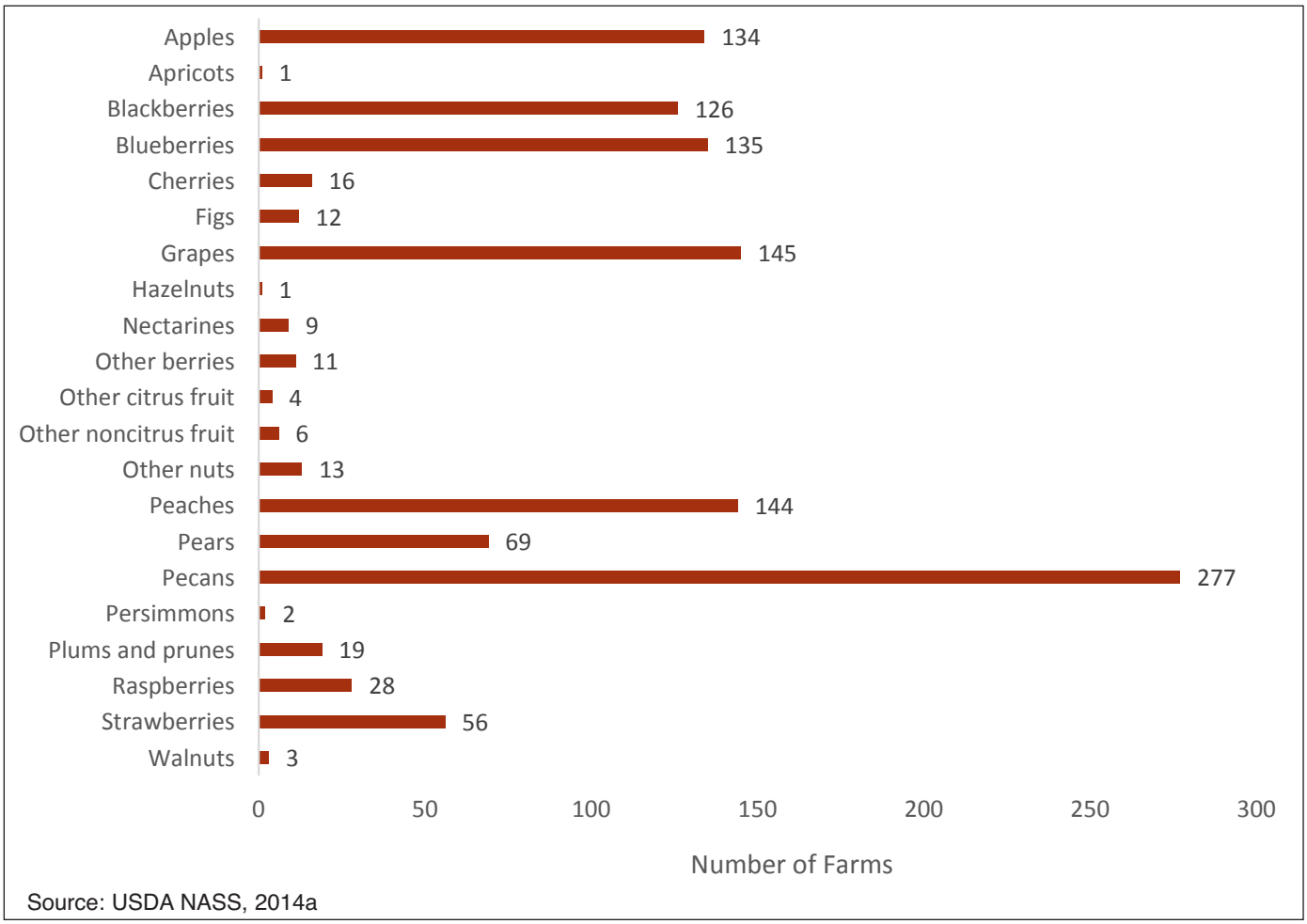
There are around 400 farms in Arkansas primarily involved in growing fruits and nuts. These farms represent slightly less than one percent of all farms in the state, utilizing more than 51,000 acres of land. In 2012, the average farm size for fruit and nut producers was 128 acres with sales values totaling more than $13 million. Farm production expenses typically average around $30,000 per farm, with labor being the greatest production expense for fruit and nut farmers. In 2012, more than $3 million was expensed to hired farm labor. Supplies, repairs and maintenance cost farmers another $1 million, with gas, fuel and oil costing just under $1 million (USDA NASS, 2014b).

Outside of operations specializing in fruit and nut production, farms specializing in other products may also produce fruits or nuts, in addition to their primary crops. In 2012, fruits and/or nuts were grown on more than 1,200 Arkansas farms[1]. The following figure shows the number of farms producing various fruit and nut varieties across the state (Figure 1).

In terms of selling these products, the Arkansas GROWN™ website lists 121 vendors selling fruits and berries produced in Arkansas through local farms, cooperatives, restaurants and markets. Of the items listed, strawberries, blackberries and blueberries were the most popular, with an average of approximately 88 vendors selling these products annually. For nuts, the Arkansas GROWN™ website lists 38 vendors selling pecans and 11 selling peanuts across the state (Arkansas GROWN, 2017). Arkansas Market Maker™ shows 358 businesses involved in either buying or selling fruit and nuts through their market place. Of those 358, 26 (mostly public schools) were listed as being solely buyers, with the rest selling their fruit and nut products using the online market (Arkansas Market Maker, 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 123 fruit and nut producers across the state. Survey results show most (67 percent) fruit and nut farmers to be sole proprietors, with 19 percent being limited liability corporations, 8 percent partnerships, 6 percent corporations and one 501c3 nonprofit. These farms have been producing fruit for an average of 21 years and nuts for 31 years. A third 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

Figure 1. Arkansas Farms Producing Fruits and Nuts in 2012



Source: USDA NASS, 2014a

[1]Includes any farm reporting a combined total of 20 or more fruit or nut trees, including grapevines, and all farms producing berries for sale. This excludes home garden, personal, or home use crops, as well as any abandoned acreage.

as conventional with an additional 28 percent being mostly conventional[2]. Six percent of farms were certified organic, while another 30 percent used organic practices without certification. Total sales values for the surveyed fruit and nut farms ranged between $5 and $1,000,000 and averaged just over $60,000 for Arkansas producers surveyed in 2014.

Industry Trends and Outlook

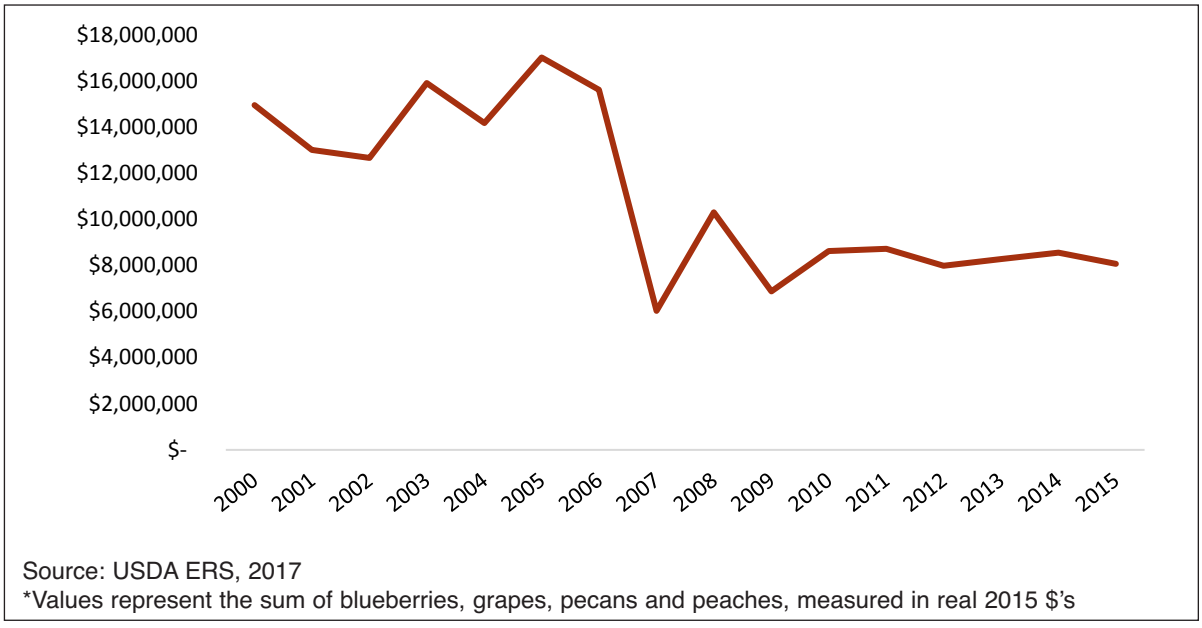
Although the fruit and nut industries make up a relatively small percentage of total agricultural production in Arkansas, in terms of national production, Arkansas has consistently ranked in the top 25 states for pecans (8th), blueberries (12th), grapes (13th) and peaches (23rd) (USDA NASS, 2016).

Total cash receipts for Arkansas' fruit and nut crops have remained relatively constant since 2010[3] (Figure 2). In March 2007, unseasonably warm weather followed by a week-long April freeze resulted in massive crop losses for farms located across the eastern United States (NOAA NCEI). Arkansas' horticultural crops took a significant hit, losing about 80 percent of all fruit production. Apples and peaches were a total loss, with additional losses seen in blackberries (-75 percent), grapes (-90 percent), blueberries (-85%) and pecans (-20-30 percent), leading to a 61 percent overall decrease in cash receipts for the fruit and nut sector (NOAA NCEI, 2007; Figure 2).

When looking at the utilized production of individual fruit and nut crops, blueberries, grapes and peaches each fell during 2007, with pecan production remaining relatively constant. Peach production rebounded in 2008 but has since declined by almost 75 percent (Figure 3).

Although Arkansas fruit and nut production has seen an overall decrease since 2003, real prices for most crops have shown an upward trend (Figure 4). Blueberries consistently capture the highest price, peaking at $2.86 per pound in 2015. This is not surprising as consumer demand for fresh berries has grown in recent years. Higher demand has been driven by improved quality, year-round availability, convenient packaging options and an overall increased awareness of the health and wellness benefits of eating fresh berries (Cook, 2011). Pecans also command a relatively high price, peaking at $2.18 per pound in 2010 before dropping to $1.59 in 2015. The rise in pecan prices can be partially attributed to growing opportunities for export. Hong Kong, Mexico and the European Union represent more than

Figure 2. Cash Receipt Value for Arkansas Fruits and Nuts,* 2000-2015



Source: USDA ERS, 2017
*Values represent the sum of blueberries, grapes, pecans and peaches, measured in real 2015 $'s

[2]Mostly conventional" refers to farms that primarily utilize conventional farming practices with occasional non-chemical or organic practices.

[3]Annual production and value data are unavailable for most specialty crops in Arkansas therefore the estimates are drawn from the summed totals for blueberries, grapes, pecans and peaches, resulting in a slight undervaluation of the fruit and nut industry as a whole.

Figure 3: Utilized Production of Arkansas Fruits and Nuts, 2003-2015

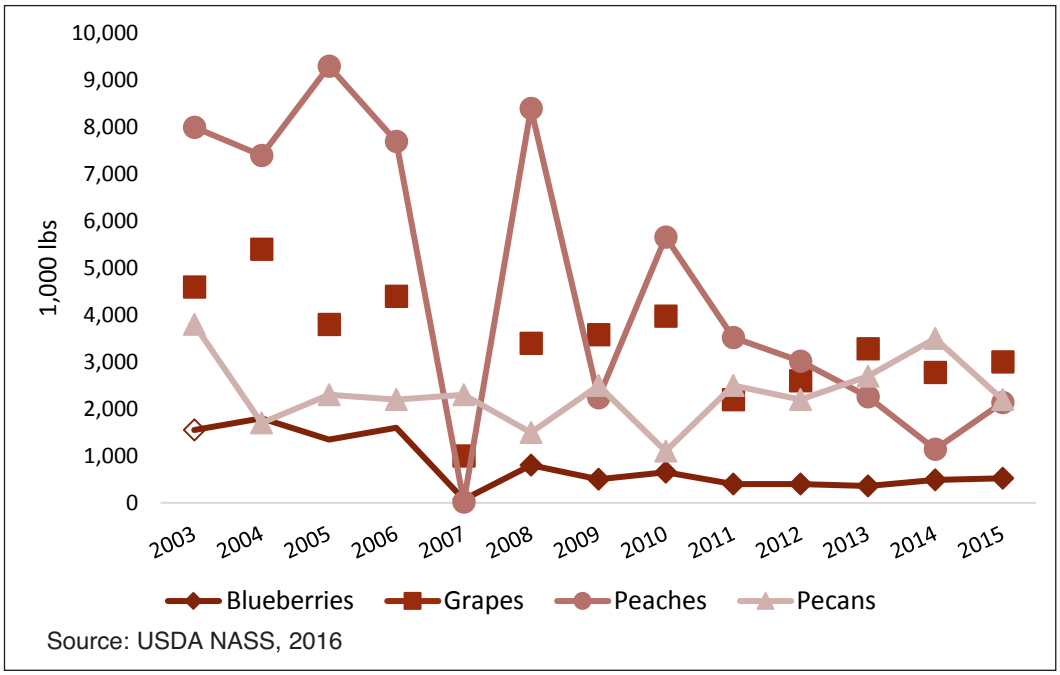
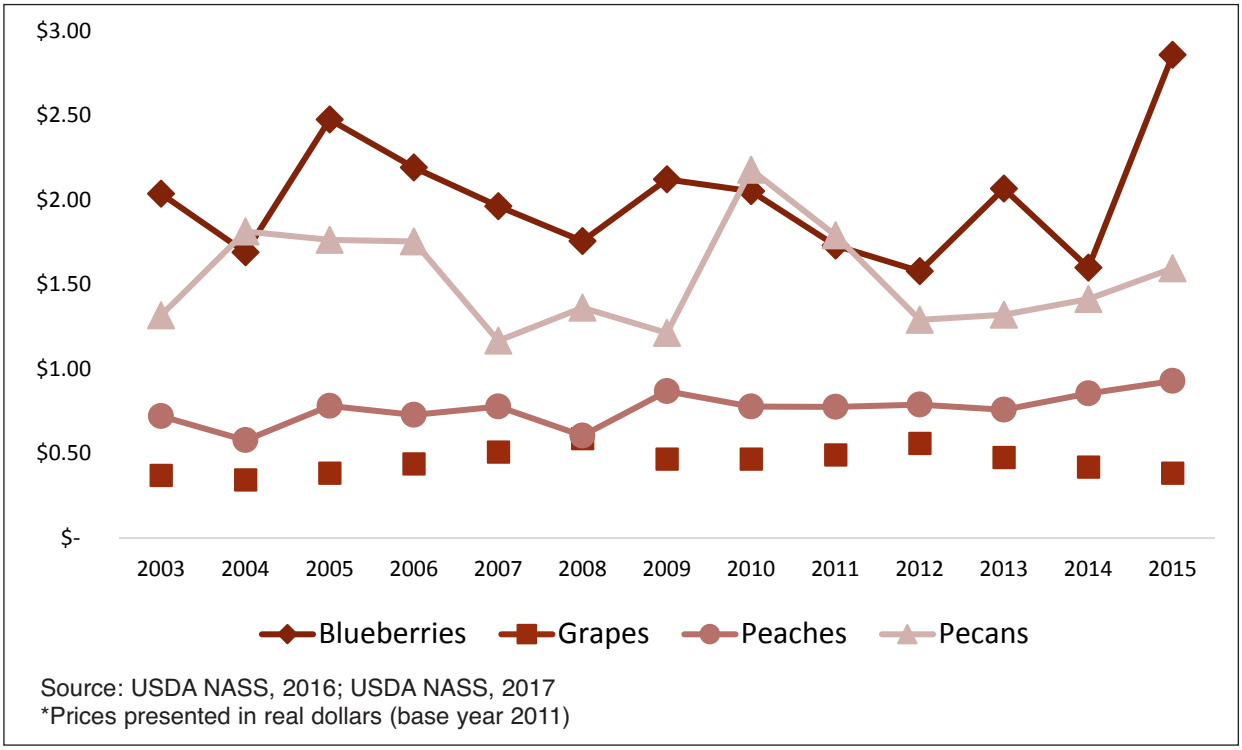


Figure 4: Prices Received for Arkansas Fruits and Nuts*, 2003-2015



70 percent of the world market for U.S. pecans with groups such as the National Pecan Growers Council (NPGC) working to connect foreign buyers with U.S. farmers to further expand the market for pecans (USDA FAS, 2012). The price for peaches and grapes has remained relatively constant with prices per pound in 2015 being $0.93 and $0.38, respectively (Figure 4).

Industry Issues

Pests and disease are a common concern for fruit and nut producers across the state. Plum curculio has been identified as a key pest for both apple and peach crops. Without treatment, farmers may see their entire harvest infested with larvae. This pest can be controlled with well-timed insecticide sprays applied

during late April to mid-May. The oriental fruit moth is also a concern for Arkansas' apple and peach producers (Johnson, 2017).

Broad mite, spider mite and spotted wing drosophila (SWD) are a growing concern among Arkansas berry producers. SWD is an invasive fruit fly that lays its eggs in ripe or ripening soft fruit, primarily blueberry, blackberry and raspberry. Over several days the eggs develop into larvae inside the fruit making the berries unmarketable. For SWD, the application of insecticides combined with immediate refrigeration of the harvested fruit has been shown to reduce infestation in berries. Mite control can generally be managed through the application of miticides on all bronzed and cupped terminal leaves (Johnson, 2017).

Pecan weevils and stink bugs threaten the productivity of pecans by feeding on the nuts throughout various stages of pecan development. Shelling facilities tolerate up to 2 percent nut damage before reducing the price per pound given to producers (Johnson, 2017).

In the recent CARS survey, more than half of responding producers expressed concerns regarding their ability to generate profits. A major issue impacting the profitability of fruit 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 time frame. 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 who 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 fruit and nut producers. Upon harvest, these products are often sold through fresh markets where consumers tend to purchase items based upon aesthetic appeal. 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. Fruit and nut products unsuitable for fresh market sales can be processed into other goods such as jams, jellies, purees, pies, etc. Due to the nature of these goods, the outside appearance of the crop is not as important, and thus machines may be used for harvest, allowing for a faster and cheaper process. It should be noted that, due to the small scales of local operations, mechanical harvest of most fruits does not occur in Arkansas. However, mechanical harvest of pecans and other nuts is very common.

Industry Spotlight

After raising row crops for 29 years, Robert (Crash) Carruthers recognized the opportunity for his farm to benefit from the introduction of pecans. Low row crop prices did not allow for Carruthers to capitalize on economies of scale on his 160-acre farm. By transitioning into pecan production, he was able to keep costs low and gain a higher net value. His farm is located on the north bank of the Arkansas River, near Morrilton, and was a natural choice for this crop due to the optimal climate and soil type for pecans. His entire harvest is sold to a wholesaler in Oklahoma. His advice for starting specialty crop production involves these key aspects: examine the climate, understand the potential of return on investment and understand the expenses involved.

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