



ECONOMIC Contribution

of Arkansas Agriculture

2013

UofA DIVISION OF AGRICULTURE
RESEARCH & EXTENSION
University of Arkansas System



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\$17,045,528,425

Agriculture accounted for
\$17.0 billion of Value Added^a
to the Arkansas economy in 2011.

That's almost 17 cents of
every \$1 of Value Added.

^aValue Added is the sum of employee compensation, proprietary income, other property-type income and indirect business taxes.

Source: "Economic Contribution of the Agricultural Sector to the Arkansas Economy in 2011," by English, L., J. Popp, and W. Miller. Research Report 992. Arkansas Agricultural Experiment Station, University of Arkansas System Division of Agriculture, Fayetteville. Forthcoming 2013.

Computed using 2011 Arkansas database from MIG, Inc. (Latest year for which relevant data were available.)

Total Contribution

The total economic contribution of the **Aggregate Agriculture Sector** includes three areas of wealth and job generation.



- **Direct contributions** are generated by farm production and processing of crops, poultry, livestock and forest products.
- **Indirect contributions** result when agricultural firms purchase materials and services from other Arkansas businesses — a very important part of the economy in many communities.
- **Induced contributions** result when employees of agricultural firms and their suppliers spend a portion of their income within Arkansas.

These contributions are reported in terms of Jobs, Labor Income and Value Added.

- **Jobs** includes all wage and salary employees, as well as self-employed workers in a given sector.
- **Labor Income** consists of two parts. First is proprietary income, which includes all income received by self-employed individuals. Second is wages, which includes all payments to workers including benefits.
- **Value Added** includes Labor Income plus indirect taxes and other property-type income such as payments for rents, royalties and dividends. Value Added and Gross Domestic Product (GDP) are equivalent measures in theory but are estimated using different methods and data sources.

Government payments — payments made directly to some recipients in the farm sector — are included in the contribution analysis. Input providers (fertilizer, pesticide and equipment manufacturers) and retail locations (restaurants, grocery stores, lawn and garden centers, etc.) are considered part of the Aggregate Agriculture Sector, but some of the economic activity of these industries and other retail stores and input providers is picked up as indirect and induced effects and included in the total contribution.



Value Added by the Aggregate Agriculture Sector in Arkansas, 2011

Contribution Area	Million \$	% Total Contribution	% State Total
Production	2,643	15.5	2.6
Processing	6,173	36.2	6.0
Ag-Related	193	1.1	0.2
Total Direct	9,008	52.8	8.7
Indirect	4,980	29.2	4.8
Induced	3,058	17.9	3.0
TOTAL	17,046	100.0	16.5

Agriculture Provides

- 259,243 Jobs, which is approximately one in every six Jobs in Arkansas.
- Almost \$10.1 billion in Labor Income, or 15% of the state's total Labor Income.

Arkansas Counts on Agriculture

The Aggregate Agriculture Sector's share of the state economy is much greater for Arkansas than for any contiguous state and for the averages of the Southeast region and the United States.

How much greater?

The Aggregate Agriculture Sector's share of the state economy^a in Arkansas is:

- **4 times greater** than in Texas.
- **3 times greater** than in Louisiana.
- **2.6 times greater** than in Oklahoma.
- **1.7 times greater** than in Tennessee.
- **1.5 times greater** than in Missouri.
- **1.3 times greater** than in Mississippi.
- **1.7 times greater** than for the Southeast^b region.
- **2.3 times greater** than for the U.S. as a whole.

^a Calculations based on the percent contribution of the Aggregate Agriculture Sector to state GDP. Data Source: U.S. Department of Commerce, Bureau of Economic Analysis, Regional Accounts Data, 2013.

^b The Southeast is defined by BEA to include the states Ala., Ark., Fla., Ga., Ky., La., Miss., N.C., S.C., Tenn., Va. and W.Va., and is not the sum of Arkansas' contiguous states listed in the table.



**Arkansas is in the top 25
states in the production of
24 agricultural commodities.
(2012 Production Year)^a**

- No. 1 in Rice
- No. 2 in Broilers
- No. 3 in Catfish (foodsize)
- No. 3 in Cotton (upland)
- No. 4 in Cottonseed
- No. 4 in Grain Sorghum
- No. 4 in Turkeys
- No. 5 in Sweet Potatoes
- No. 10 in Soybeans
- No. 10 in Chicken Eggs
- No. 12 in Pecans
- No. 12 in Tomatoes
- No. 12 in Watermelons
- No. 13 in Beef Cows^b
- No. 13 in Blueberries
- No. 13 in Grapes
- No. 16 in Sod Production Acreage^c
- No. 17 in Corn for Grain
- No. 19 in Peaches
- No. 20 in Honey
- No. 20 in Wheat
- No. 22 in Cattle and Calves
- No. 22 in Hogs and Pigs
- No. 23 in Oats

(Footnotes on page 11.)

Total Contribution

The Natural State

Agriculture and forestry are vital to the diverse, interactive economy of Arkansas as well as to our very identity as “The Natural State.”

National Ranking

- **No. 15 in agricultural cash receipts in 2011.**
Arkansas had 47,800 farms on 13.5 million acres in 2012. (USDA NASS, 2013)
- **No. 4 in saw-log production in the South***, with about 19.0 million acres of forest land representing approximately 57% of the total land base in 2012.

Source: Johnson, T.G., J.W. Bentley and M. Howell, 2009; U.S. Census Bureau, 2011; USDA Forest Service Forest Inventory and Analysis, 2013.

*Includes 13 states: Okla., Texas, Ark., La., Ky., Tenn., Miss., Ala., Ga., Fla., S.C., N.C. and Va. (TPO, 2007)

(Footnotes for page 10.)

Source: National Agricultural Statistics Service, data for 2012.

^a Data for some states are unavailable due to nondisclosure, especially for livestock and livestock products commodities. As a result, these states are not included in the rankings, which may affect Arkansas' actual rank.

^b Beef cows is a Jan. 1, 2012, inventory comprised of “beef cows that have calved” and “beef cow replacement heifers 500 pounds and over.”

^c Source: Census of Agriculture, data for 2007; Haydu, J.J., A.W. Hodges, and C.R. Hall, 2006.

Highlights of Arkansas Agriculture 2008-2012

	Year	Production (thousands)
Rice	2010	115,675 cwt.
Broilers	2008	6,380,000 lbs.
Catfish (foodsize)	2008	83,700 lbs.
Cotton (upland)	2012	1,320 bales
Cottonseed	2012	452 tons
Grain Sorghum	2012	11,340 bu.
Turkeys	2008	610,700 lbs.
Sweet Potatoes	2012	780 cwt.
Chicken Eggs	2008	3,139,000 eggs
Soybeans	2012	135,880 bu.
Pecans	2011	2,500 lbs.
Tomatoes	2012	285 cwt.
Watermelon	2012	423 cwt.
Beef Cows ^a	2010	1,116 head
Blueberries	2008	800 lbs.
Grapes	2010	3,980 lbs.
Turfgrass ^b	2007	8.3 acres
Corn for Grain	2012	123,710 bu.
Peaches	2008	8,400 lbs.
Honey	2008	2,100 lbs.
Wheat	2008	55,860 bu.
Cattle and Calves	2009	549,883 lbs.
Hogs and Pigs	2008	141,380 lbs.



<i>(Continued)</i>	Year	Production (thousands)
Oats	2011	900 bu.
Hay	2009	3,131 tons
Timber	2012	26,393 tons

Highest commodity production levels for the years 2008-2012.

Source: National Agricultural Statistics Service, data for 2008-2012, and Arkansas Forestry Commission, 2013.

^a Beef cows is a Jan. 1, 2012, inventory comprised of “beef cows that have calved” and “beef cow replacement heifers 500 pounds and over.”

^b Source: 2007 Census of Agriculture. Most recent data available.

U.S. Agriculture 2010-2011

Arkansas' diverse portfolio of livestock products and crops supports the value of the agriculture sector year in and year out.

In 2011, there were 48,300 farms in Arkansas. These farms generated a net farm income of \$1.4 billion^a (ERS, 2013). Arkansas ranked 14th in total agricultural exports with a value of \$3.4 billion. Arkansas was ranked in the top ten in the nation for exports of four commodities:

- Number 1 in rice, with exports valued at \$859 million;
- Number 2 in chicken meat, with exports valued at \$488 million;
- Number 4 in cotton, with exports valued at \$615 million; and
- Number 9 in soybeans, with exports valued at \$664 million.

In 2011, Arkansas ranked 34th in overall GDP at \$106.6 billion^a (BEA, 2013). However in terms of agricultural cash receipts in 2011, Arkansas ranked 15th with a value of \$8.4 billion. Arkansas ranked 17th in total crop cash receipts at \$4.0 billion and 11th in total livestock cash receipts at \$4.4 billion.

According to NASS, rice and soybean cash receipts represented 31% of total agricultural cash receipts and 65% of the total crop cash receipts in 2011. Arkansas rice cash receipts comprised almost 41% of the U.S. total rice cash receipts.

Arkansas total cash receipts increased 22% between 2010 and 2011.^b Cash receipts for many individual crops in 2011 increased greatly over their 2010 values. Crops with the largest increases in value between 2010 and 2011 were wheat (489% increase), sorghum grain (289%), oats (146%) and pecans (145%). However, some of the fruit crops saw a decrease in value such as blueberries (32% decrease), grapes (24%) and peaches (19%).

In real dollar terms, cash receipts from livestock and livestock products increased \$532 million (or almost 14%) from 2010 to \$4.41 billion. While nearly all of the livestock sector experienced at least some growth in 2011, the overall growth was driven in large part by increases in cash receipts for turkeys (37%), farm chickens (32%), milk (28%), chicken eggs (27%) and hay (25%).

^a All values in 2011 dollars unless otherwise noted.

^b Comparisons between 2010 and 2011 values presented here are different than those released by the USDA NASS in the Arkansas Agricultural Cash Receipts Report (September 5, 2012). Our calculations are based on real 2011 dollars. That is, our numbers are adjusted for inflation, which allows for a true “apples to apples” comparison.

Direct Contribution

Crops Sector

The crops sector includes all enterprises engaged in the production and processing of cotton, food and feed grains, hay and pasture, fruits, nuts, vegetables and oil bearing crops.

Direct contribution of crops

Jobs	62,918
Wages	\$828 Million
Labor Income	\$1,640 Million
Value Added	\$3,062 Million





Strength in Diversity

Arkansas has been the leading producer of rice in the U.S. since 1973. (Dunn and Flanders, 2012)

The rice industry (rice farming and milling) has a direct contribution of:

- 1 in 6 crops Jobs;
- Almost \$1 in every \$3 of crops Labor Income; and
- \$1 in every \$3 of crops Value Added.

Soybeans is the second largest crop industry, although it is number one in crop production with a direct Value Added contribution of \$690 million.

The production of soybeans, rice, wheat, corn, grain sorghum, oats and cotton accounted for 37% of the crops sector's direct Value Added. Remaining direct Value Added was comprised of the production (4%) of a variety of locally important crops (hay and forage, melons, fruits, vegetables, pecans, turfgrass and ornamental plants) and the processing (59%) of crops in the state. This diversity is a major asset in weathering downturns in a given commodity.

2012 Commodity Production

Commodity	Acres Harvested (thousands)	Production (thousands)	Value (thousand \$)
Broilers ^a		5,764,900 lbs.	2,882,450
Soybeans	3,160	135,880 bu.	1,956,672
Rice	1,285	95,992 cwt.	1,363,086
Corn for Grain	695	123,710 bu.	859,785
Cattle and Calves		498,602 lbs.	532,508
Chicken Eggs ^a		3,011,000 eggs	438,769
Cotton (upland) ^b	585	1,320 bales	420,710
Turkeys ^a		577,100 lbs.	416,089
Timber		26,393 tons	383,077
Hay	1,450	1,748 tons	232,416
Wheat	450	24,750 bu.	172,013
Cottonseed ^b		452 tons	114,356
Hogs and Pigs		88,930 lbs.	81,470
Grain Sorghum	135	11,340 bu.	70,489
Sweet Potatoes	3.9	780 cwt.	24,180
Tomatoes	1.0	285 cwt.	18,240
Catfish (foodsize)		20,000 lbs.	17,400
Turfgrass	5.5	8.3 acres	16,392
Watermelon	1.8	423 cwt.	6,726
Peaches	1.2	5,580 lbs.	4,604
Honey		1,638 lbs.	3,014
Pecans		2,200 lbs.	2,974
Oats	7	560 bu.	2,016
Grapes	0.6	2,200 lbs.	1,281
Blueberries	0.3	400 lbs.	660
Total	7,781		\$10,021,377

Sources: National Agricultural Statistics Service, 2013, and Arkansas Forestry Commission, 2013, except Turfgrass, Census of Agriculture, data for 2007.

^aTotal Poultry Industry (Broilers, Turkeys and Chicken Eggs): \$3,737M

^bTotal Cotton Industry (Cotton (Upland) and Cottonseed): \$535M

Animal Agriculture Sector

The animal agriculture sector includes production and processing of poultry, eggs, beef and dairy products, hogs and pigs and other animals.

Beef cattle and poultry are companion enterprises on many farms, with poultry providing cash flow and fertilizer for pastures.

Aquaculture is a major enterprise and is often a companion to row crop farming in the Delta region.





Direct contribution of animal agriculture

Jobs	52,000
Wages	\$1,419 Million
Labor Income	\$1,681 Million
Value Added	\$2,855 Million

Protein Power

Arkansas is a leading producer, processor and marketer of animal agriculture protein products.

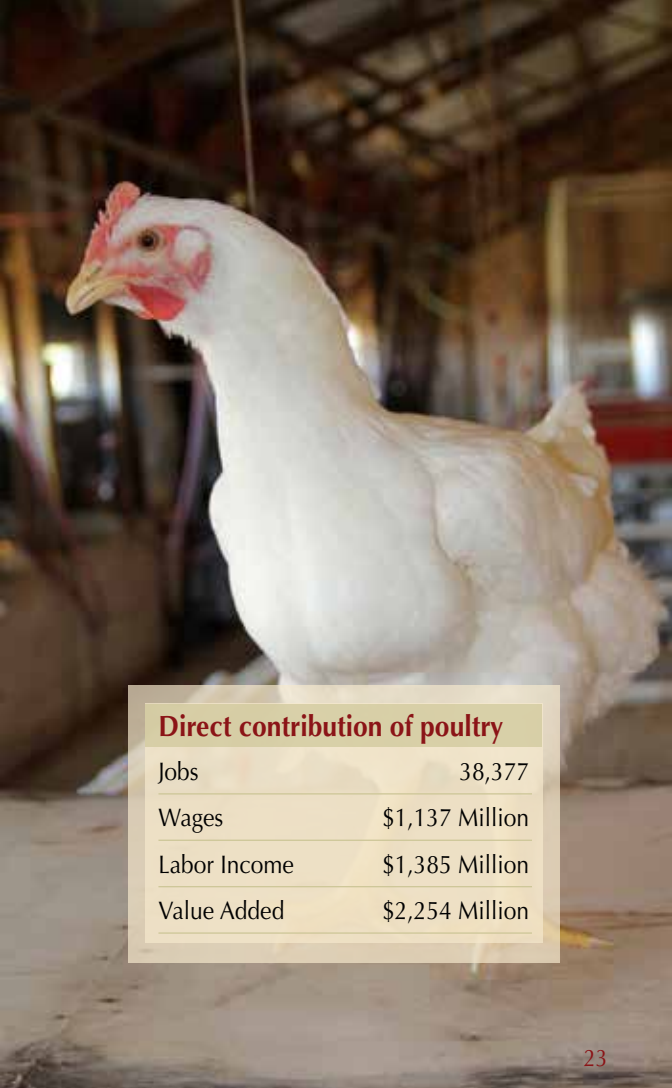
Poultry and egg production and processing is the leading industry, with direct contributions of:

- 1 in 4 agricultural Jobs;
- Almost \$1 in every \$4 of agricultural Labor Income; and
- \$1 in every \$4 of agricultural Value Added.

Other sectors round out Arkansas animal agriculture. Cattle are raised in every county, with a January 1, 2013, inventory of 1,600,000 head. Of these, 851,000 were beef cows. The swine inventory for December 1, 2012, was 107,000 head. Foodsize catfish numbered 13,000,000 on January 1, 2013.

Source: National Agricultural Statistics Service, data for 2012 and 2013.





Direct contribution of poultry

Jobs	38,377
Wages	\$1,137 Million
Labor Income	\$1,385 Million
Value Added	\$2,254 Million

Direct Contribution

Forestry Sector

The forestry sector includes forest products, furniture, and wood and paper processing.

Timber acreage standing includes the following forest-type groups: 42% oak and hickory; 30% loblolly and shortleaf pine; 11% oak and pine; 11% oak, gum and cypress; 5% elm, ash and cottonwood; and 2% other forest-type groups.^a

^a Numbers may not sum to 100% due to rounding.

Source: USDA Forest Service Forest Inventory and Analysis, 2013.



Direct contribution of forestry

Jobs	26,234
Wages	\$1,393 Million
Labor Income	\$1,972 Million
Value Added	\$2,899 Million

Economic Engine

Forestry is the leading employer in South Arkansas — one of the nation's leading timber-producing regions.

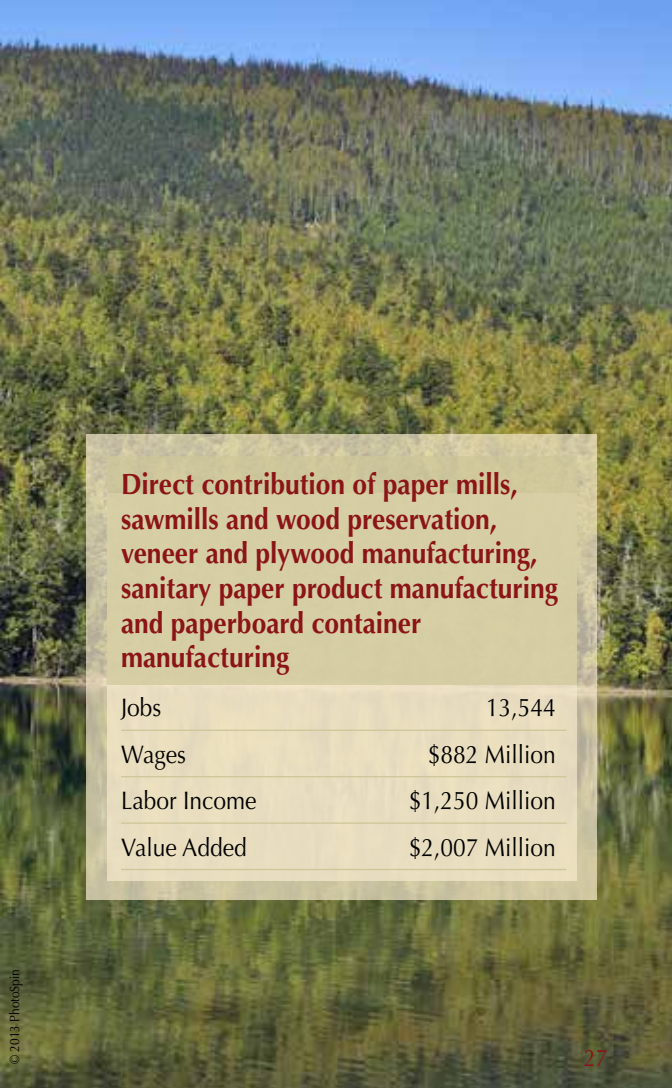
Paper mills, sawmill and wood preservation, veneer and plywood manufacturing, sanitary paperproduct manufacturing, and paperboard container manufacturing contribute:

- 52% of forestry Jobs;
- Two-thirds of Wages and Labor Income; and
- 69% of Value Added.

A Multifaceted Resource

Forest-based tourism, recreation, watershed protection, wildlife habitat and aesthetic values are vital to the economy, environmental health, culture and identity of Arkansas.





**Direct contribution of paper mills,
sawmills and wood preservation,
veneer and plywood manufacturing,
sanitary paper product manufacturing
and paperboard container
manufacturing**

Jobs	13,544
Wages	\$882 Million
Labor Income	\$1,250 Million
Value Added	\$2,007 Million

Across the Board

Arkansas agriculture generates Jobs in all 20 industries in the North American Industry Classification System (NAICS) used for economic analysis.

Jobs generated by agriculture in top five NAICS industries

Agriculture, Forestry, Fishing and Hunting	78,700
Manufacturing	75,644
Transportation and Warehousing	12,594
Health and Social Services	12,011
Retail Trade	11,292s
Top Five Total	190,241

(73% of all Jobs generated by agriculture)

Source: U.S. Department of Commerce, Bureau of Economic Analysis, Regional Accounts Data, 2013.

Based on 2-Digit NAICS Aggregation. (U.S. Census Bureau, 2006)



The far-reaching contributions of agriculture are seen in the distribution of Value Added throughout the economy.

Value Added generated by agriculture in top five NAICS industries

Manufacturing	\$6,616 Million
Agriculture, Forestry, Fishing and Hunting	\$2,835 Million
Real Estate and Rental	\$1,073 Million
Wholesale Trade	\$1,002 Million
Transportation and Warehousing	\$867 Million
Top Five Total	\$12,393 Million
(73% of all Value Added generated by agriculture)	

Source: U.S. Department of Commerce, Bureau of Economic Analysis, Regional Accounts Data, 2013.

Based on 2-Digit NAICS Aggregation. (U.S. Census Bureau, 2006)

Promoting Agricultural and Rural Sustainability

Breakthrough Solutions

The Division of Agriculture's **Breakthrough Solutions Community and Economic Development** team brings together resources from 18 partner organizations to help communities build the basis for a vibrant and prosperous economic future. Cities like Harrison, Mena, Waldron, Mount Ida, Eureka Springs and Dumas have directly benefited from this extraordinary public/private partnership.

Directed by Dr. Mark Peterson and aided by the Extension Community and Economic Development Unit, this program engages citizens, makes use of the community's assets and initiates action toward their desired goal.

Harrison, the pilot Breakthrough Solutions community, reports a net increase of 35 new businesses in the targeted district from 2009 through the end of 2012, more than \$100,000 in grants to improve the downtown, and highway changes to make traffic patterns pedestrian- and bike-friendly, among other notable accomplishments.

Terry Cook, executive director of the Harrison Convention and Visitors Bureau, summed up Harrison's success with Breakthrough Solutions this way: "Sales tax [revenue] has increased since we started," he said. "We have reduced accidents and speeding by 87 percent. The traffic count is up 400 cars per day, but [there is no increase in] accidents. We took back our Main Street."

In addition:

- Breakthrough Solutions was selected as one of six innovative programs in the nation to participate in an Innovative Community Development Programs Initiative, funded by the North Central Center for Rural Development.
- Today's technology offers the opportunity to share the success of Breakthrough communities across Arkansas and the nation, while continuing to learn from the experience of others.



The Center for Agricultural and Rural Sustainability

The mission of the Division of Agriculture's **Center for Agricultural and Rural Sustainability (CARS)** is to increase prosperity for rural Arkansas through sustainable practices. The Center has identified three major focus areas:

- **Sustainability indices** — measure key impact areas and trends over time, foster productive dialogue and promote progress toward sustainability.
- **Life cycle analysis** — quantify the environmental and social impacts of a product by measuring the inputs and outputs associated with its supply chain.



- **Food industry program** — strengthen farm to retailer connections and promote locally produced foods through research, education and outreach.

CARS faculty and staff have constructed a portfolio of life cycle assessments (LCAs) for various agricultural crops including cotton, cocoa, corn, dairy products, peanuts and pork. These LCAs provide the baseline data necessary for agricultural sector-level strategies for increasing the safety, security, and stability of U.S. products. They also support development of farm-level sustainability metrics that are informed by science, outcomes-based, transparent and technology-neutral. CARS faculty and staff are internationally recognized leaders in the science of sustainable agriculture.



Arkansas Is Our Campus

The University of Arkansas System's Division of Agriculture conducts research and extension programs to support Arkansas agriculture in its broadest definition.

Our employees include Cooperative Extension Service faculty in all 75 counties and Agricultural Experiment Station scientists, extension specialists and support personnel on five university campuses and at five research and extension centers and eight research stations.



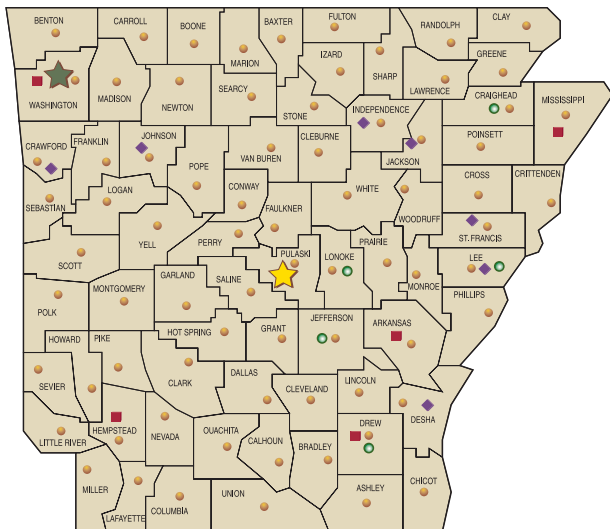
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**DIVISION OF AGRICULTURE
RESEARCH & EXTENSION**

University of Arkansas System

Locations



-  Division & CES Headquarters, Little Rock
-  AAES Headquarters, Fayetteville
-  Research & Extension Centers
-  Research Stations
-  Other Locations
-  County Extension Offices



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