

Arizona's Tree Nut Industry & Its Contributions to the State Economy

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October 2019

What is the Issue?

Arizona's tree nut industry has experienced rapid growth in recent years. Arizona ranks among the top four states in its production of pecans and is one of only three states with commercial production of pistachios. Pecan and pistachio production in Arizona, combined, ranks within the state's top ten agricultural commodities by cash receipts and state cash receipts for tree nuts are poised to increase in coming years. Tree nut production contributes to local communities, supporting economic activity and jobs in businesses both directly and indirectly linked to tree nut production. Meanwhile, challenges exist around sustainable withdrawal

of water resources by a growing industry in groundwater-dependent areas and balancing the livelihoods of rural residents employed in agriculture and agriculture-linked industries with the availability and affordability of groundwater supplies relied upon by residents, agricultural users, and the environment. This report presents an analysis of the tree nut industry's economic contribution to Arizona's economy, including production, investment in new orchards, processing and other activities, and multiplier effects, and presents an overview of the industry, its trends, and water use for tree nut production in Arizona.

What Did the Study Find?

Arizona's tree nut industry directly generated an estimated \$92.6 million in sales in 2017.

Cash receipts for pecans totaled \$70 million in 2017, and pistachios generated an estimated \$8.4 million. Additionally, Arizona tree nut producers generated an estimated \$12.8 million in sales through tree nut processing and \$1.4 million through other farm related activities such as agritourism and sales of agricultural byproducts such as mulch and wood.

The economic contribution of the tree nut industry in Arizona is not fully reflected in the industry's cash receipts.

Because growers are investing in new, non-bearing acreage, grower expenditures on orchard establishment and maintenance stimulate additional economic activity within the state not reflected in cash receipts for tree nut commodities sold. In 2017, 38% of the state's total tree nut acreage was non-bearing, 36% for pecans and 44% for pistachios. While this acreage does not generate revenues for producers, it does incur expenses, some of which are fulfilled through local businesses and labor force.

Results show that the tree nut industry's total economic contribution was an estimated \$113 million in gross state product and \$190 million in sales in 2017, including multiplier effects.

In total, industry production and investment supported 1,436 jobs, including on-farm jobs, farm proprietors, and jobs in industries supported through indirect and induced linkages. Total labor income supported, including employee compensation and business owner income, was \$73 million.

Arizona Tree Nut Industry Sales, 2017

Industry Sales Component	Estimate
Cash Receipts	\$78.4 million
Pecans	\$70.0 million
Pistachios	\$8.4 million
Other Farm Related Income	\$1.4 million
Shelling & Hulling	\$12.8 million
Total Industry Sales	\$92.6 million

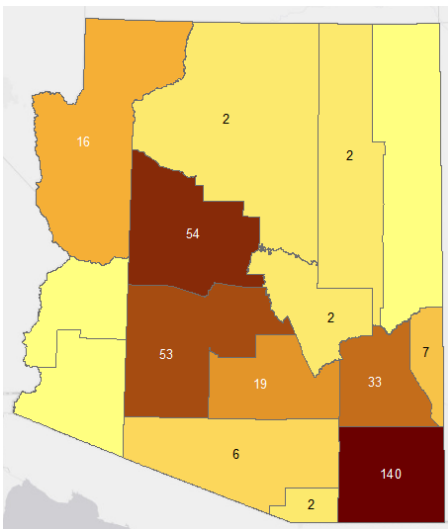
Economic Contribution of Tree Nut Industry to Arizona State Economy, 2017

Impact Type	Employment	Labor Income	Gross State Product	Sales
Direct Effect	678	\$35,297,000	\$55,362,000	\$92,560,000
Indirect Effect	378	\$19,962,000	\$26,285,000	\$43,167,000
Induced Effect	380	\$17,483,000	\$31,591,000	\$54,738,000
Total Effect	1,436	\$72,742,000	\$113,238,000	\$190,466,000

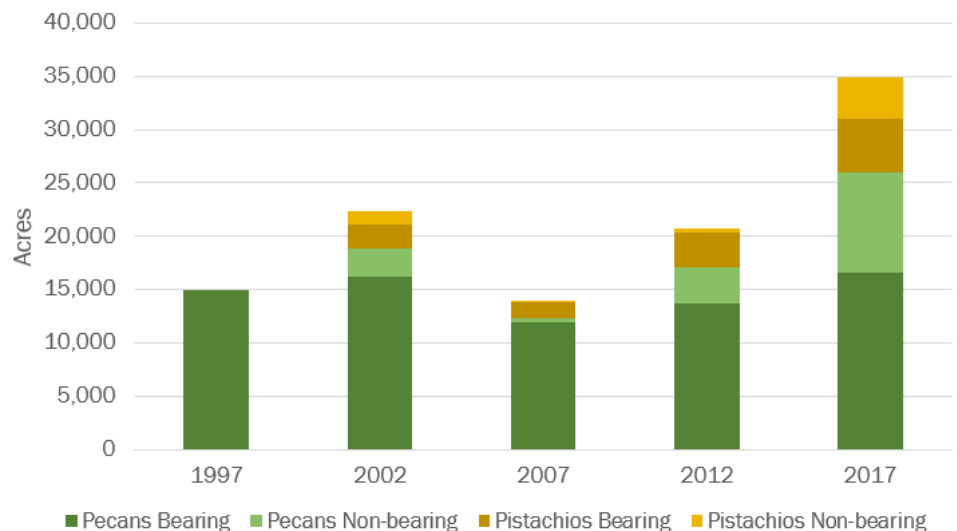
Acreage & Operations

In 2017, 343 Arizona farms produced tree nuts, 267 of which produced pecans and 69 of which produced pistachios. Tree nut acreage totaled 35,261 acres in 2017, 21,724 acres of which were bearing acreage and 13,537 acres were non-bearing. Between 2007 and 2017, total industry acreage more than doubled.

Arizona Tree Nut Farms by County, 2017



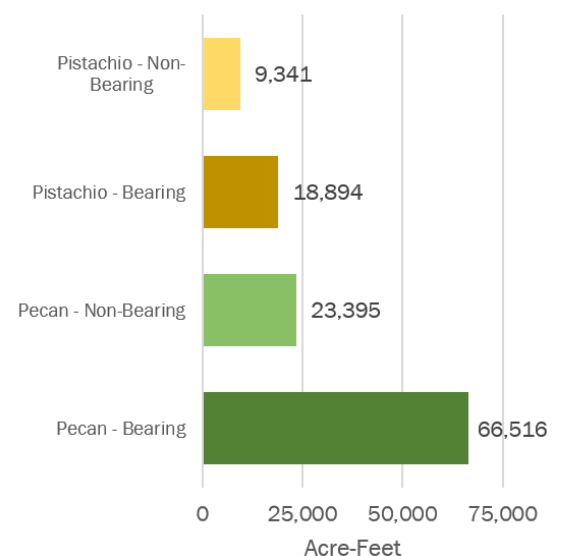
Arizona Tree Nut Acreage by Crop & Bearing vs. Non-Bearing Status, 1997-2017



Water Context

- * Total irrigation water use of the tree nut industry in Arizona was an estimated 118,145 acre-feet in 2017. This is expected to rise in coming years as non-bearing acreage matures and enters into production.
- * Unlike annual field crops which can be fallowed in times of drought or limited irrigation water availability, orchards represent years of investment and cannot simply be fallowed from one year to the next.
- * Much of the state's tree nut acreage is in groundwater-dependent areas of the state. As bearing acreage continues to expand, balancing the water needs of a growing industry with water supply sustainability for nearby communities and agricultural producers alike will continue to be an important issue in these areas.
- * Compared with other crops in Arizona, **average per-acre irrigation water application requirements for tree nuts rank just below the average of 4.4 acre-feet applied per acre for irrigated cropland statewide.**
- * Gross revenues per acre-foot of water applied for pecans and pistachios are higher than major field crops in the state, when considering both bearing and non-bearing acreage. **Considering only bearing acreage, gross revenues per acre-foot of water applied exceed \$1,000 per acre-foot for pecans and \$800 per acre-foot for pistachios in 2017.** For comparison, gross revenues per acre-foot for major Arizona field crops ranged between \$200-\$400.

Arizona Tree Nut Est. Water Use by Crop & Bearing vs. Non-Bearing Status, 2017



How was the study conducted? This study relies on secondary data from the 2017 USDA Census of Agriculture, USDA NASS, USDA ERS, Bureau of Labor Statistics, Administrative Committee for Pistachios, American Pecan Council, and Arizona Department of Agriculture. Economic multiplier effects were estimated using the 2017 IMPLAN 3.1 input-output model for Arizona.

For full report, please visit:

<https://cals.arizona.edu/arec/publication/arizonas-tree-nut-industry-and-its-contributions-state-economy>