

# FARMING N.C.

**A**griculture and agribusiness account for 17% of all jobs in the state and an annual economic impact of \$91.8 billion, according to state officials. Across North Carolina, farms are incorporating innovative practices to evolve as the agribusiness industry has over the decades. This section explores just a few of the business changes that farms are making.

## PLAYING WITH FOOD

With the North Carolina Food Innovation Lab's pilot plant expected to open in early March, the state could see some new developments with local crops.



*Kannapolis' Food Innovation Lab enables farmers and food industry experts to test new products, do research, host and attend workshops, and more, with the goal of making farming more profitable.*

Food from a lab isn't necessarily a bad thing, according to those working with the North Carolina Food Innovation Lab in Kannapolis.

The venture is six years in the making and provides a spot for fruit and vegetable farmers, food processors, entrepreneurs and major-label companies looking to create, test and market plant-based foods. The



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## FARMING NC

lab's open house was held last November and those involved, including managing partner N.C. State University, believe it will eventually have a global impact.

"The product development and test kitchen have opened, and the pilot plant should open in March," says director Bill Aimutis, a 30-year veteran of food research and development. "We're still awaiting the arrival of equipment, and then we'll go for our licensing, so the pilot plant should be open [this month]." The pilot plant will be used by food manufacturers to test out new ingredients, formulations and processes.

The NCFIL supports product research and development, pilot plant production, workshops and food-industry consulting. It is equipped to process fruits, vegetables, raw plant materials and grains, as well as test and develop ideas in a food-scientist-

staffed test kitchen. The layout also includes collaboration space, a wet-processing pilot area, research pilot plant, Good Manufacturing Practice regulations pilot area, extracting room, dryer room, cold rooms, cold storage and an office area.

"Business in North Carolina is very friendly," Aimutis says. "We have a well-trained, available workforce. And as we identify sites to develop food plants, we have access to water, access to highways and railways. Frankly, we have a food-processing-friendly environment in the state, because we do a lot of it already."

N.C. Agriculture Commissioner Steve Troxler says the open house and ribbon-cutting were a defining moment. "I have said many times that we need to focus on our strengths as we look to grow our economy, and [the] agriculture and

agribusiness [industry] is a strength in North Carolina. It is the leading industry at \$91.8 billion."

Agriculture and agribusiness account for 17% of North Carolina jobs, according to N.C. State statistics. North Carolina farmers harvested 102,000 acres of peanuts in 2019, 4,000 acres more than the year before, according to recent USDA research. The state produced 53.2 million bushels of soybeans from 1.52 million acres, up 3% from 2018. North Carolina is one of the nation's largest sweet potato producers, with 1.7 billion pounds grown annually, according to N.C. State. Add in 149 million pounds of cucumbers — N.C. ranks fifth nationally for production — and top-10 yields of squash, watermelon, cantaloupe, tomatoes and pumpkins, and you have a robust agribusiness economy.

The lab could benefit farmers in all



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regions by introducing manufacturing value into the crops. Richard Linton, dean of the College of Agriculture & Life Sciences at N.C. State, uses beans as an example. String beans by themselves might not have a lot of value for farmers. If you can find a way to make string beans into a shelf-stable product, their value increases.

Linton, alongside other researchers at N.C. State, worked on a feasibility study exploring these options. He later chaired a government task force created in 2015 with the goal of exploring how they could grow the agriculture industry as a whole in the state.

"It will help entrepreneurs create new products, help us recruit large food-manufacturing companies, help farmers derive more value from the ingredients they produce, and allow large corporations to produce new technologies that help meet consum-

ers' needs," Linton says.

The 2013 feasibility study estimated that by implementing the initiatives outlined, the annual economic impact of North Carolina's food manufacturing industry could be \$80.2 billion in total economic output by 2020 and provide 290,553 jobs.

The lab will give startups as well as well-known companies — think Nestlé, PepsiCo and Conagra Brands — a pilot plant to turn ideas into products. The NCFIL also works with equipment manufacturers that need test space.

"Over time, we expect the Food Innovation Lab will position North Carolina on the leading edge of plant-based food production. That reputation will help us recruit new operations by both domestic and global manufacturers in the fast-growing plant-based food industry," says Laura Lee, business recruitment manager of food processing for the

Economic Development Partnership of North Carolina. Lee's job was specifically created for the lab project.

Troxler grew up on a family-owned farm that produced tobacco, wheat, vegetables and soybeans. He knows firsthand that "the only thing that is constant in agriculture is change." The solution to weathering bad seasons and change, he believes, lies in this new innovation lab.

"The only answer is to find ways to make farming profitable for our farmers," he says. "This includes increasing markets for North Carolina commodities and building our food-manufacturing opportunities. My hope is that the Food Innovation Lab brings opportunity and growth even greater than what the original study estimated. [It] shines a light on our potential in value-added agriculture, and I believe it will serve as a catalyst for the industry." ■

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# ADVANCEMENTS IN AGRIBUSINESS

A new building will house four state departments within the N.C. Department of Agriculture and Consumer Services to better serve the agribusiness industry.



*A new lab in Raleigh will combine four state divisions focusing on agribusiness under one roof to encourage more industry collaborations.*

The \$107 million Agricultural Sciences Center under construction in Raleigh will be a diagnostic laboratory unlike any in the country, all intricately designed inside 225,000 square feet.

Funded with \$94 million in Connect NC bonds and \$13 million from the N.C. General Assembly, the lab will be a scientific mecca for food safety, animal diagnostics, pharmaceutical testing, pesticide safety and motor-fuel quality: five industries in four laboratories that will impact and protect farmers and consumers.

"This facility will replace aging infrastructure and provide a greater level of support and service to the farming and agribusiness community as well as support those industries that utilize

ag commodities in the manufacturing of their products," says Ron Fish, assistant director of agribusiness development at the N.C. Department of Agriculture and Consumer Services.

The three-story center will have administrative offices and lab space for the N.C. Food & Drug Protection Division, a food-safety testing area that processes about 20,000 samples annually; the Veterinary Divisions Lab, which performed about 570,000 animal disease-diagnostic tests last year; the Structural Pest Control and Pesticides Division, which conducted more than 6,000 tests last year; and the Standards Division Weights and Measurements Lab and Motor Fuels Lab. The weights and measurements lab serves about 500 customers from the pharmaceutical, defense and manufacturing industries while the Standards Division's motor-fuels lab tests about 21,000 samples of gasoline, diesel, kerosene and motor oil a year.

"It will be a one-of-a-kind facility that

will house more disciplines of science than any other facility we're aware of in the country," says Joe Reardon, consumer protection assistant commissioner of the agriculture department. "It is these advancements in science and technology that hopefully will attract some of the senior scientists to work in these areas."

The goal in having these four divisions under one roof is to encourage more collaboration and increase effectiveness, according to the department's website.

N.C. State University is just one local entity that will see benefits from the center. The lab complex's veterinary section will have a viewing area where students can watch animal autopsies in real time and study advancements in veterinary science.

A ribbon-cutting for the center is planned for October, but the building will accommodate about 200 employees when it officially opens in December. Some will transfer from

the divisions' current aging Raleigh locations.

"After the ribbon-cutting, we'll continue to put in the infrastructure to make it operational with the IT connections and security systems," Reardon says. "We are going to bring with us 1,400 pieces of equipment that will support the various facilities that will be co-located in the facility. We will co-locate five labs. We anticipate having new types of sciences in the building that will provide better support for the citizens of the state and, in doing so, attract new talent to operate some of those processes."

The Agricultural Sciences Center replaces outdated buildings in Raleigh that house the current four departments. Having all the departments in one place will also shorten time to get test results, helping the state do things like protect against diseases such as swine flu, Reardon says.

The labs touch on nearly every part of people's lives through the agribusiness industry, he says, including the safety of the food we eat. The veterinary section will also work with professionals across the state to assure the health of companion animals.

The standards lab concentrates on measurement, volume, weight, temperature and length. "For example, weights used in the pharmaceutical industry to verify ingredients in complex drugs," Reardon says, "or weights used to verify scales to sell commodities. Those scales you see in the grocery stores every day, we certify those scales."

The Motor Fuels division made 7,500 determinations from tests last year, which may increase under these new, innovative conditions. "It's important, when you buy gas, that it has the right level of octane as well as no other contaminants," he says. "The manufacturers must blend the fuels to

certain standards."

Farmers specifically benefit from the Pest Control and Pesticides work. The lab will help ensure the accuracy of products such as fertilizer and analyze customer complaints.

The Food & Drug division is vital, he says, for everyday living. The work in this new building will save countless lives.

"I truly believe that with this new facility and the ability to more rapidly detect potential food contaminants, as well as with new testing platforms that will be employed, we will be better able to serve the citizens of our state concerning the foods they consume on a daily basis," Reardon says. "That's what makes this place special, and that's what makes me the most proud: to know we have the ability to test these products and get them off the market, to protect [people like] expectant mothers. That's what makes us do what we do." ■

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# FRUIT BALLAD

A focus on the local market is helping N.C. apple farmers survive.

Shortly after Jeff Nix opened a packing house in 2018 at his Hendersonville apple farm, a fellow grower dropped by to look. “Have you ever been to Las Vegas?” Nix asked his guest.

“No,” the grower said.

“Well, welcome to Las Vegas, N.C.,” Nix said. “Because this is the biggest gamble I’ve ever done.”

The farming industry is a tumultuous one, and the state’s apple farms are no exception, making expansions like Nix’s packing house daunting. The demands and methods of North Carolina apple production are changing, and that’s affecting the state’s 200-plus farmers who attempt to sell harvests to major food companies, grocery stores, school systems and local buyers.

Flavor Full Farms is a fourth-generation family business. Nix, 55, grows several varieties, including Mustu, Gala and Fuji, on 110 acres in a mountainous county that produces about 85% of the state’s crop, according to the North Carolina Farm Bureau.

Nix started driving a tractor at age 8, he says, moving apple bins in the field for his dad. Now, he’s trying new growing methods and different markets for his produce. The only thing that’s remained the same is that each apple is hand-picked.

“The apple industry has changed from the 1960s, ‘70s, ‘80s, when everybody wanted a great big, beautiful apple, like a big Red Delicious or Golden,” he says. “Now in the last three to five years, they want a medium-size apple so they don’t

have any waste to throw away. And it’s all about flavor. And everybody wants convenience. They want it sanitized and washed. Then the new generation even wants you to peel it, and they want it sliced for them.”

North Carolina produced 115 million pounds of apples in 2018, ranking eighth in the nation, according to Tony Haywood, a marketing specialist at the North Carolina Department of Agriculture. In 2017, the state’s apple farms totaled 5,200 acres — mostly in Henderson County.

He’s also seeing the changes in the industry, saying that most apples produced in the state will be sold at local markets or roadside stands. Gone are the days of large companies buying apples from North Carolina for applesauce, baby food and other uses. Many are turning to the West Coast, such as Washington, for their supply.

Haywood says recent state production figures show 52 million pounds of apples were sold fresh and 50 million pounds were sold for processing. “So

it was pretty close but from what I’m seeing, it’s going away from that,” he says. “The big companies like Gerber aren’t buying.”

Instead, some are being sold to local beverage companies for products such as hard cider. He also knows growers who want to export to China and India, and one who sends whole apples to the Caribbean.

But for the most part, more apple farmers are focusing on local buyers as they look for places to sell their produce. Haywood says he speaks to grocery stores and retailers to encourage them to purchase from local growers, citing the chemicals needed to maintain an apple as it travels.

At a recent apple festival in Hendersonville, he says, “the agricultural extension folks did a blind taste test. One was a West Coast Honey Crisp, and one was a local Honey Crisp. And they all picked local.”

Nix says about 90% of his business includes selling to local stores such as Food Lion and Harris Teeter and to area school systems through the state’s Farm to School Program. He met with area Food Lion officials in December about adding more local crops to their stores.



*The apple industry in North Carolina is changing: Larger companies like Gerber are less likely to purchase goods for applesauce. Now, the focus is on local.*

Flavor Full Farms' last harvest produced around 58,000 bushels of fruit, he says. To expand, Nix has diversified the density of his trees, planting 900 to 1,000 trees per acre. He also is using a new spindle technique, where trees are supported on trellis wires to increase plant density. More trees, more crops and more money.

One of the biggest challenges local farmers face is the cost of farming compared with the profits received. As part of a long-term family business, Nix has seen firsthand the change in how much investment is required while seeking little change in profitability. "I've got a picture from 1962 where Andy Griffith is standing beside a fruit truck, like a mom-and-pop truck you'd see on the side of the road, and apples were 6 cents a pound," he says. "In 2018, some of our apples were sold for 6 cents a pound. That's some of the problems we face as farmers. How the input cost is so, so much more from the '60s to now, and the cost returns back to the farmers [are] not as much. If [the farm is] not generationally passed down, no one can afford to get into the business." Nix's family started growing apples in western North Carolina in the 1930s.

Despite these challenges, Nix and other apple farmers are adapting and continuing to succeed. Overall, he says, the rewards outweigh any bumps in the road.

"There's a lot of sleepless nights, but there's a lot of benefits. You can watch a tree become productive and once you get farming in your blood, it's hard to get it out," he says. "Growing up and farming, I've watched the changing of times when food and farms were plentiful until now where they're on a percentage scale of being lost. One thing that needs to be out there is this: No farmers, no food." ■

— Kathy Blake is a freelance writer from eastern North Carolina.

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