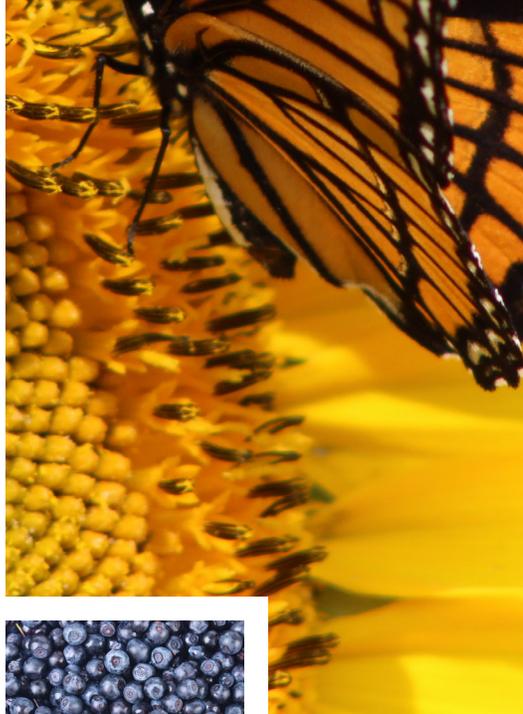




# RESEARCH STATIONS ANNUAL REPORT

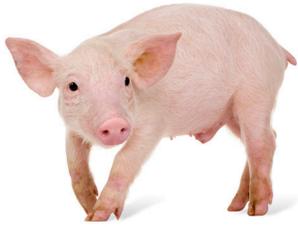
2016



North Carolina  
Department of Agriculture  
& Consumer Services

North Carolina State University  
College of Agriculture  
& Life Sciences

NC A&T State University  
School of Agriculture  
& Environmental Sciences



## OUR MISSION

The mission of the Research Stations Division in North Carolina is “To manage crop and livestock facilities that serve as a platform for agriculture research to make farming more efficient, productive and profitable, while maintaining a sound environment and providing consumers with safe and affordable products.”

To that end, the research stations provide the testing ground for innovation and discovery that undergirds the \$84 billion industry that is North Carolina agriculture. Moreover, this innovation and discovery makes national and international contributions to food production and food security.



## AGRICULTURAL RESEARCH IS THE KEY

The Research Stations Division is diligent in meeting this challenge. North Carolina is uniquely situated to be at the forefront of agricultural advances that will feed current and future generations. Along similar latitude, the Research Stations in North Carolina offer a wide variety in soils, climate and cropping systems. Our diversity makes us an extremely attractive place in which to push the bounds of agricultural productivity through research. World-class faculty at N.C. State University and N.C. Agricultural & Technical State University lead the way, focusing our stations’ agricultural research on new technology, improved crop varieties, better utilization of available resources and increased production efficiency.

## NORTH CAROLINA IS INVESTED IN AGRICULTURAL RESEARCH

With its 18 research stations and incredibly diverse soils and climate, its world-class research faculty at N.C. State and N.C. A&T, and its proximity to Research Triangle Park, North Carolina is positioned as a hotbed for research in agriculture. North Carolina is a top-10 agricultural state in terms of cash receipts from farming. North Carolina is unique in that its research stations are a partnership of both the N.C. Department of Agriculture and Consumer Services and N.C. State University College of Agriculture and Life Sciences, as well as N.C. A&T State University’s College of Agriculture and Environmental Sciences. Of those top-10 states, only Texas has more off-campus research stations than North Carolina. **According to a 2011 study published by the University of California-Davis, there is a \$19.90 return on every \$1 of public funds spent on agricultural research in North Carolina over the life of the technology created.**

## IMPACT SNAPSHOT OF RESEARCH STATIONS

With North Carolina’s critical mass of faculty and research stations, new information and technology benefitting farmers is generated daily. It is impossible to list all the new and exciting things that come from agricultural research efforts in North Carolina. To provide a glimpse, here are a couple of examples of exciting research outcomes:

- The N.C. State University peanut breeding program partners with four research stations to bring value to peanut growers in the state. Peanut growers have gained \$4.30 per acre for each year in the past 40 years due to improved peanut varieties to bolster this \$75.8M industry. While the Peanut Belt Research Station is the hub of peanut field research, the Upper Coastal Plain, Border Belt Tobacco, and Sandhills Research Stations all contribute to the breeding program.
- N.C. State University researchers working at the Tidewater Research Station are helping swine producers improve piglet survival, a key economic trait. Research conducted at the Tidewater Research Station identified a practical management strategy that improved piglet colostrum intake by 32%. Feeding an improved diet, the last 10 days of gestation improved piglet colostrum intake, weaning weight and reduced variation between piglets. Calculated return on investment was approximately 5 to 1. Subsequent studies are planned for the summer of 2017 to validate results and fine-tune management strategies.

- N.C. A&T State University researchers have evaluated the effectiveness of combining reduced tillage practices with cover cropping alternatives to determine a soil management plan that results in short-term benefits that ameliorate current Piedmont soil issues. In general, the practices of cover cropping for residue cover, reducing or eliminating tillage, and the use of raised beds for vegetable production improve soil quality, increase water and nutrient retention, and increased crop productivity over conventional production practices.
- Agricultural production requires large amounts of energy, fertilizers and water. The supply of energy, fertilizers and water for agricultural production is becoming a constraint to the food security and environmental sustainability. Researchers at N.C. A&T State University have accumulated knowledge in performing long-term thermophilic anaerobic co-digestion of swine manure and biomass. The results will support the development of an efficient and economic biological process to recover energy, nutrients and water from agricultural and food wastes for sustainable agricultural production.



## FEEDING THE WORLD BY 2050

World population is projected to exceed 9 billion by the year 2050. In order to meet the demand of the world's burgeoning population, food production will have to more than double over the next 34 cropping seasons. Food security quickly becomes a national security issue when scarcity occurs. Thus, the challenge of feeding the world's growing population is critical to a healthy, prosperous and stable state, country and world.

## DEALING WITH ADVERSITY

In October of 2016, Hurricane Matthew made its impact felt across eastern North Carolina. In addition to the devastating losses suffered by N.C. citizens and millions of dollars of economic impact on North Carolina agriculture, the Research Stations felt the impacts of this historical storm too. The Cherry Research Farm in Goldsboro, which is bordered on three sides by the Neuse River, remained flooded for over a week. Despite floodwaters, animal care for the research herds of beef cattle, dairy cattle and swine had to continue. Employees were ferried to work at the station's animal units. To complicate matters, the 150-head dairy cattle herd began calving season while the station remained flooded. Other Research Stations across North Carolina answered the call for help and supplied Cherry Farms with staff, hay and many other needed supplies. Assistance from the N.C. Forest Service was needed to airlift feed and hay across the floodwaters. During the event, not a single newborn calf or animal was lost and research programs remained intact. The cooperation of the entire Research Stations Division was needed and on full display in responding to the natural disaster.

## HELPING OTHERS

Following the flooding of Hurricane Matthew, Western North Carolina saw one of the worst outbreaks of wildfires in the state's history. Firefighters from North Carolina and 43 other states spent weeks battling fires raging across tens of thousands of acres across the mountains. Many were away from family during Thanksgiving. Recognizing the need to offer some comfort to those sacrificing so much, and with the urging of Commissioner Troxler, the Research Stations helped organize a Thanksgiving meal for firefighters based in Graham County. Using donated food, employees of the Division cooked and provided over 250 firefighters a Thanksgiving meal. Research Station Division employees volunteered from as far away as Plymouth and Lewiston to accomplish the task and could help North Carolina say "thank you" to so many from across the country who had answered the call to help.

In 2009, the Research Stations initiated a strategic planning process in which four main goals were identified as critical to meeting its mission. The progress in 2016 for each goal is summarized, including key highlights.



# OUR GOALS

Goal 1: Enhance Infrastructure for High-Quality Applied Agricultural Research

Goal 2: Ensure Efficient Research Station and Farm Management

Goal 3: Enhance Working Relationships and Communication

Goal 4: Strengthen Outreach, Extension and Education

## GOAL 1: ENHANCE INFRASTRUCTURE FOR HIGH-QUALITY APPLIED AGRICULTURAL RESEARCH

### Improving the Existing Research Platform

Due to low commodity prices and adverse weather, funding for major investments in infrastructure was limited for the Research Stations in 2016. Opportunities were seized, however, to improve many units across the stations. Because of the threat of highly pathogenic avian influenza (HPAI), the poultry unit at the Piedmont Research Station near Salisbury was depopulated for an extended period. Without birds in the houses, extensive investments in the repair and maintenance of the facility could take place. Moreover, additional capacity for collecting and transmitting data wirelessly was installed during the depopulation time. This resulted in greater capacity and increased efficiency when poultry research trials resumed in September. Similarly, upgrades to cattle handling facilities and fencing at the Upper Mountain Research Station near Laurel Springs, irrigation systems at the Sandhills Research Station near Jackson Springs, and the blueberry sorting and packing facility at Castle Hayne all resulted in a more efficient and capable Research Station system. In sum, the Research Stations utilized available resources and timing to refurbish and fine-tune overall research system capacity in 2016.

### Precision Ag Investment

Building on investments from previous years, additional technology has been deployed on the stations resulting in greater precision, more efficiency and more relevant research to support the high-tech agricultural industry. The Research Stations Division continues to advance in deploying GPS-related technology and wireless

connectivity. The advantages are many, but include greater precision in implementing research, increased efficiency for operations, and replicating production practices more similar to current agricultural practices in North Carolina. Research Station Superintendents are finding creative ways to implement technology in all facets of the research program.

### Enhancement of the Beef Cattle Research Resources in North Carolina

The system continues to develop a uniform herd of cattle to better support research programs in the animal and forage area by coordinating husbandry activities between all of the stations as prescribed in the 2013 plan. We are seeking to increase the capacity for researchers to compete nationally and have initiated several projects related to fescue toxicosis.

As in previous years, embryo transfer (ET) from the superior cattle at Upper Piedmont Research Station near Reidsville continues to be the primary method of establishing uniform genetics among all the resident herds. Heifers born at Mountain Research Station near Waynesville and Butner Beef Cattle Field Laboratory, which were ET calves themselves, are being bred to become future replacements for the current cross bred cow herd. The production of these females will accelerate the establishment of a uniform set of cattle which facilitate research.

Bovine genetic progress is slow, as the generational interval of cattle is more than four years. During this phase, the infrastructure within the system is being upgraded. Examples of improvements include fixed-knot fencing at multiple research stations, improved surface-water management, working facilities and enhanced utilization of forage resources across multiple stations. All locations are active participants in the



CattleMax system that coordinates the tracking of cattle resources within the system.



## Food Safety

The implementation of the Food Safety Modernization Act (FSMA) will have a large impact on North Carolina agriculture. Research Stations are well-positioned to generate research information and provide hands-on training related to FSMA and its implementation. New research projects focused on fresh produce food safety were initiated at the Piedmont Research Station and Cherry Research Farm in 2016. In partnership with the Food and Drug Division of NCDA&CS, the Research Stations are recipients of funding from FDA to equip the stations with equipment for research and outreach related to FSMA. New wash stations, produce packing and handling capacity, and training equipment will be purchased to augment existing infrastructure.

## Training Programs

While investing in equipment is important, our people are our greatest resources. Staff from all 18 research stations have taken part in professional development opportunities and will continue to do so. In 2016, six research station Superintendents were invited to present at national meetings to their peers from research station systems around the country. Numerous research technicians and specialists attended trainings, seminars and conferences related to their work area, such as the Southeast Vegetable Growers Conference, Tobacco Workers Conference and the Beltwide Cotton Conference. Many serve on local and statewide boards. The Research Stations Division will continue to invest in its people so that we not only keep current, but are leaders in the development and use of newer and greater technology.

## Forestry Program

The forestry program is hosting four new forest research projects and continues to host eight existing projects. Strong relationships with NCSU's College of Natural Resources, the Forest Technology programs at Haywood and Wayne Community Colleges, and exploring new relationships with several private and out-of-state institutions strengthens the forestry program in the Research Stations Division. Aside from research, educational use of the Stations' forest resources so far this year has included regular

guest lecturing at NCSU by our Forest Manager, five faculty and four class tours, and the ongoing use of the Umstead Research Station by the NCSU senior capstone course in forest management and the Cherry Research Station by Wayne Community College's Forest Mensuration course. The Program also made favorable adjustments to its permit-based recreational program including reduced fees, expanded use periods, and simpler registration. Forest product harvest volumes remain to be within the planned allowable levels to ensure sustainability and harvested areas have been regenerated to allow stand improvement and the potential for future management. Several harvests and intermediate stand treatments implemented this year utilized alternative silvicultural systems to serve as valuable demonstration areas for other State Agencies and Divisions, as well as private consulting foresters and landowners.

## North Carolina Bioenergy Research Initiative

In 2016, the Bioenergy Research Initiative (BRI) initiated its fourth grant cycle by awarding \$1 million to 13 projects. Eight of these projects are new; six build on previously funded projects and two are new concepts for the BRI. Four projects were extended in time and one project



was expanded in scope. Funded projects are being conducted by NCSU (9), Appalachian State University (1), Power Resource Group (1), Tyton Biosciences (1), and Carolina Land & Lakes RC&D Council (1).

BRI hosted a fall field day at the Williamsdale Field Laboratory in Duplin County with 59 attendees representing land owners, researchers and industry leaders. The second annual Research/Industry Update meeting was held on the State Fairgrounds in Raleigh in March 2016 with 47 attendees representing various stakeholders.

BRI hosted Leadership Granville, presented at a local Cooperative Extension club, conducted an educational popcorn workshop for a 4-H club, participated in an FFA Ag Career Day and offered support to one new business venture and several industry companies. One high school student was hired temporarily for eight months and a temporary part time employee was hired to help support program objectives.

## GOAL 2: ENSURE EFFICIENT RESEARCH STATION AND FARM MANAGEMENT



*Research is conducted on over 80 commercially grown commodities in North Carolina. We have one of the most diverse agricultural states in the nation, which is supported by research on our 18 research stations.*

### By the Numbers:

Research faculty at NC State, NC A&T, and USDA working on NC Research Stations	97
Research projects conducted across the system	501
Students educational tours and visits on the research stations	556
Acres devoted to pollinator research	34
Field days, seminars, and other training and educational events	443
Number of attendees at field days, seminars, and other training and educational events	16,935

### Regional Management

In 2016, the Research Stations continued to utilize a regional management approach that takes advantage of the diversity and connectedness of the system. The sharing of both labor and equipment resources is becoming the norm and a standard way of doing business. Efficiencies are gained, and capability at individual stations is enhanced by pooling resources to accomplish the research mission.

Just as important, the regional approach has allowed some staff to specialize in certain areas and become a resource upon which multiple stations can call. An excellent example of this supportive culture was in response to the Hurricane Matthew flooding at the Cherry Research Farm in Goldsboro. Multiple stations helped supply Cherry with labor, animal care expertise, hay, feed, and other supplies during this event. Because of regional management and a cooperative culture, the Research Stations were well-equipped to respond to this natural disaster rapidly and appropriately. Several stations no longer have office support but rather share office support with other stations. Management has encouraged this form of professional development and sharing of talent.

### Safety

The emphasis on safety has made our working environment one that is better for employees, and

results in less lost time and worker's compensation expenses. We continue to emphasize all aspects of safety, especially hazard avoidance. Each time an incident (injury or near-miss) occurs, a simple electronic notice is sent to all units within 24 hours. The sharing of information concerning hazards is critical to hazard recognition and avoidance.

### Efficiency Through Technology

To a great extent, the success of research relies on good communication and accurate record-keeping. Research Station staff strive to have the best communication possible with research project staff and maintain a myriad of records related to the projects, as well as routine safety inspections, inventories and production records for each farm. Several pilot projects were initiated in 2016 to utilize wireless technology, cloud storage, tablets, and cell phones to streamline communication and record-keeping. These have proven to be beneficial, providing more readily accessible and efficient forms for implementing research projects and maintaining records and inventories. The Poultry Unit at the Piedmont Research Station is now collecting all data from an intensive layer trial on tablets which allows for real-time transmission of data to project leaders, resulting in quicker analysis and publication of results than ever before. Further implementation of modern technology to research project and farm management will continue in 2017.

## Tracking of Labor for Research Projects

All Research Stations began tracking hours worked specific to separate research projects. These data have proven very helpful in providing a more complete picture of the cost of individual research projects. The information is used to more accurately allocate resources and forecast costs. Moreover, as research project leaders learn more about the labor demand on Research Stations, grant applications can more accurately seek adequate funding for projects. Tracking of hours is accomplished electronically for fast entry, retrieval and analysis.



Mountain Horticultural Crops Research Station. Photo by Marc Hall.



Piedmont Research Station. Photo by Marc Hall.



## GOAL 3: ENHANCE WORKING RELATIONSHIPS AND COMMUNICATION

<b>Internal Review</b>	Based on an internal review conducted in 2015 and 2016, the Research Stations have identified key areas for management of the research platform in the future. These include a focus on labor management, resource allocation and communication with research faculty, among others. All managers as well as research faculty participated in the review with a goal of developing guiding principles for management of the Research Stations.
<b>Relationship with NC State Administration</b>	Administration at NCDA&CS and NCSU meet at least monthly to facilitate effective management and strategic decision-making.
<b>Advisory Groups</b>	Faculty Advisory Committees were formed for each research station in 2013 and continued to function in 2016. The role of the advisory committees is to further enhance communication between research faculty and stations as it relates to strategic planning and utilization of resources and facilities to ensure the research needs of faculty are being met.
<b>Partnerships</b>	Strategic partnerships between NCDA&CS, NCSU, USDA-ARS and commodity groups resulted in station upgrades, improvements and overall research capability.
<b>Center for Environmental Farming Systems (CEFS)</b>	The Cherry Research Farm continues to anchor research and field activities for organic farm practices;
<b>Multi-State Projects</b>	Research stations host several multi-state projects such as the SUNGrains breeding initiative for wheat, oats and barley, as well as integrated pest-management programs.

## GOAL 4: STRENGTHEN OUTREACH, EXTENSION AND EDUCATION

Research Stations hosted 443 field days, seminars and trainings focused on beef, soybeans, cotton, small grains, peanuts, tobacco, blueberries, turfgrass, vegetables, tree fruits and other commodities in 2016.

In 2016, stations continued to participate heavily in a new pollinator habitat area pilot project with private support. Recognizing the value of pollinators across the landscape, all 18 stations established pollinator habitat plots to provide host plants for the myriad of pollinators present in North Carolina. Each was appropriately signed and served a dual function of increasing pollinator habitat and increasing public awareness. These areas became a research project for N.C. State pollinator specialists to monitor pollinator species composition and changes over time. The 18 stations provide a robust cross-section of North Carolina for collecting these data.

Partnerships with Cooperative Extension and Research Stations continued to strengthen in 2016. Multiple training events were held for extension at Research Stations. A concerted effort was made to more closely involve Cooperative Extension in field days, while providing a training opportunity for Research Stations and extension staff. Researchers and specialists were engaged in the planning process for field days to provide training for extension agents and Research Stations staff with the goal of both being able to provide more of the content for Research Station attendees.

Visitors to the Research Stations in 2016 were transported in trams, or people movers (purchased in 2013 and 2014), as they learned about agricultural research ongoing at the stations. The trams conform to all safety standards and ensure a comfortable, safe experience for visitors to our research stations while reducing the state's liability.

In 2016, the trams were used to transport around 5,000 visitors safely and comfortably at Research Stations events.



*“North Carolina is blessed to have exceptional research stations throughout the state, all of which are absolutely essential for research and extension faculty to conduct applied agronomic research to address emerging issues facing row-crop producers. My personal experience on these research stations has been excellent, and these stations’ staff met and surpassed all expectations in helping conduct various applied research experiments in cotton since I began my current position in early 2015. Having worked in a similar role in another state, I can easily say that NC’s research stations are second to none. Without these stations, we would not be able to adequately address agronomic issues that arise, and these issues can significantly impact producers’ profitability and sustainability.”*

**— Dr. Guy Collins, Assistant Professor and Cotton Extension Specialist, Crop and Soil Sciences, NCSU**

*“The peanut breeding program in CALS uses four NCDA&CS research stations, Peanut Belt, Upper Coastal Plain, Border Belt Tobacco, and Sandhills. Over its 60-year history, PBRS has the primary site for new peanut cultivar development, i.e., where individual plants are selected from genetically variable populations, genetically stable breeding lines are tested for yield, grade, disease reactions, and flavor, and seed is multiplied. The other sites are used for replication of yield test or for evaluation of specific diseases or stresses. We estimate that the project has resulted in a gain of \$4.30 per acre per year over the past 40 years.”*

**— Thomas G. Isleib, Professor, Crop and Soil Sciences, NCSU**

*“Without the support of the Research Stations in North Carolina, the Tobacco Research and Extension Program would not be able to provide the necessary information and tools that are critical to our grower base. Simply stated, the knowledge gained from these efforts truly fulfills the three principle missions of the Land Grant system: Research, Education, and Extension. Expressed more deeply, this information is transferred to undergraduate and graduate education courses, used to train graduate students in the fundamentals of scientific investigation, given freely to tobacco producers in an unbiased manner, and referenced by the global tobacco industry — all of which serve to sustain an industry that contributes more*

## QUOTES FROM RESEARCHERS WHO UTILIZED THE RESEARCH STATIONS

than \$750 million to the North Carolina agricultural economy on an annual basis.” — **Dr. Matthew Vann, Assistant Professor and Tobacco Specialist, Crop and Soil Science, NCSU**

“I have worked on 9 research stations in the past 6 years conducting weed management research. Weeds are one of the greatest challenges growers face each year when producing a crop, and research needs to be cutting edge and investigate the newest threats and challenges. The selection for resistant weed biotypes has created new challenges for NC growers, and the research stations have allowed us to establish resistant populations that can be closely monitored and used for testing purposes. Often, the only alternative is to work on a growers farm, which can create further infestations and alter their production landscape. We can utilize the research station staff and equipment to efficiently test and evaluate various weed management approaches, which then is translated to extension presentations and publications to educate growers in the state.” — **Dr. Wes Everman, Associate Professor of Crop Science, NCSU**

“Research stations play a significant role in our research program related to the impact of dairy foods on human health and food safety. We are examining probiotics and metabolic pathways that affect the production of functional compounds important for improved health and enhanced food safety. We are also examining how probiotics could influence food quality and consumer acceptability. Our findings would help the food industry develop new technologies to improve food safety and quality and help dairy farmers in North Carolina produce high quality milk and expand their marketing of dairy products.” — **Dr. Salam Ibrahim, Professor of Food Science, NC A&T SU**

“The research station serves as a platform for NC A&T scientists to conduct applied and fundamental research projects that address the immediate and future needs of North Carolinians. Research results have been integrated into academic curricula

that help train students on the latest findings and technologies, and have been delivered by The Cooperative Extension Program to directly benefit the health and wellness of North Carolina citizens in both rural and urban areas.” — **Dr. Sangun Gu, Horticulture Specialist, NCA&TSU**

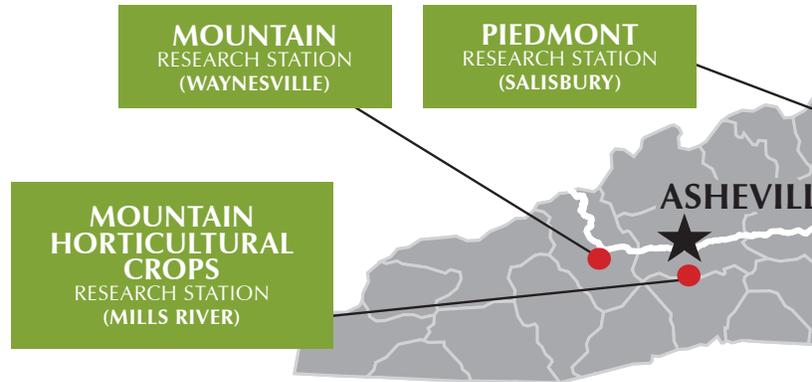
“The Agricultural Research Station has been instrumental in my ability to produce research outcomes that have helped North Carolina vegetable and row crop growers transition from conventional to conservation agriculture. I use this facility as a grower teaching resource where I demonstrate the benefits and the feasibility of adopting soil management practices for the conservation of soil and water and for the improvement of soil quality. Not only growers, but students and community groups participate and benefit from project educational activities. Montagnard, Burmese and Bhutanese refugee groups visit our research site regularly to learn sustainable food production techniques. The experiment station is a valuable resource that is needed to advance the land grant mission.” — **Dr. Charles Raczkowski, Associate Professor of Soil Science, NCA&TSU**



“Research stations play a significant role in education, discovery and engagement at the local, regional national and international levels. As scientists, we are able to develop techniques and protocols that can be used directly by our stakeholders, generate intellectual property (patents) that attracts industry interests, and produce scientific results to share with peers around the globe. We are also able to educate our brightest and smartest students to become leaders and high quality scientists. Based on the strong credentials we are able to develop through our work at the research stations, we are invited to serve on editorial boards of international scientific journals, and on national grant proposal review panels to make meaningful contributions to the professional development of our colleagues.” — **Dr. Guochen Yang, Professor of Horticulture, NCA&TSU**

# NORTH CAROLINA RESEARCH STATIONS

*These are primary research commodities, with numerous others at each location.*



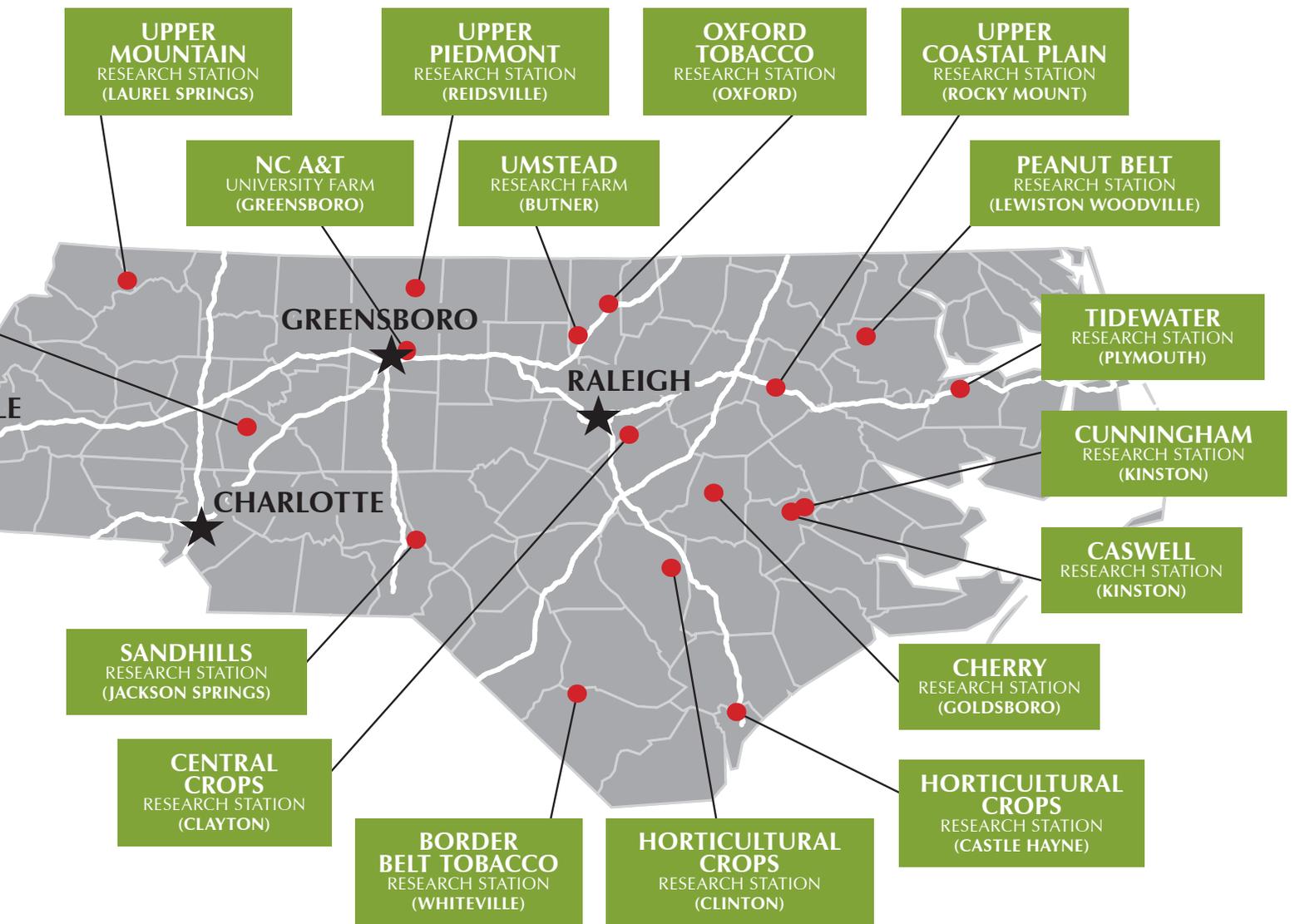
<b>BORDER BELT:</b> Tobacco, Soybeans, Corn, Peanuts, Small Grains
<b>CASWELL FARM:</b> Soybeans, Corn
<b>CENTRAL CROPS:</b> Plant Breeding, Weed Science, Corn, Soybeans, Cotton, Small Grains, Tobacco, Swine, Melons, Strawberries
<b>CHERRY FARM:</b> Grass-based Dairy, Beef, Swine, Corn, Soybeans, Cotton, Organic Farming
<b>CUNNINGHAM/LOWER COASTAL:</b> Tobacco, Melons, Sweet Potatoes, Cucumbers, Corn
<b>HORTICULTURAL CROPS, CLINTON:</b> Cucumbers, Melons, Sweet Potatoes
<b>HORTICULTURAL CROPS, CASTLE HAYNE:</b> Blueberries, Strawberries, Grapes
<b>MOUNTAIN:</b> Specialty Crops, Tomatoes, Beef, Corn, Burley Tobacco
<b>MOUNTAIN HORT:</b> Tomatoes, Ornamentals, Apples, Peaches, Peppers
<b>OXFORD TOBACCO:</b> Tobacco, Biofuel Feedstocks
<b>PEANUT BELT:</b> Peanuts, Corn, Cotton, Soybeans
<b>PIEDMONT:</b> Poultry, Dairy, Corn, Soybeans, Small Grains, Strawberries, Caneberries
<b>SANDHILLS:</b> Peaches, Turfgrass, Soybeans, Ornamentals, Cotton

<b>TIDEWATER:</b> Soybeans, Corn, Cotton, Beef, Irish Potatoes, Small Grains
<b>UMSTEAD:</b> Forestry, Beef Cattle
<b>UPPER COASTAL PLAIN:</b> Peanuts, Cotton, Soybeans, Corn, Tobacco
<b>UPPER MOUNTAIN:</b> Beef, Christmas Trees, Brambles, Burley Tobacco
<b>UPPER PIEDMONT:</b> Beef, Soybeans
<b>A&amp;T UNIVERSITY FARM:</b> Swine, Poultry, Specialty Crops, Organic Crops, Goats, Dairy

## 2016 Highlights from the Central Crops Research Station

The Central Crops Research Station near Clayton is always a hub of activity. It is a critical location for many plant breeding research programs and supports the excellence in plant breeding for which N.C. State is known. During 2016, the following occurred at Central Crops:

- Hosted 1,556 visitors in 65 different events as varied as classes from N.C. State to field days.
- Conducted research in 21 different crops commercially produced in North Carolina.
- Worked with 37 different faculty project leaders from N.C. State, ECU, UNC-W, and USDA.
- Assisted in the field trials and education of over 30 graduate students and 3 undergraduates to help train the agricultural leaders of the future.
- Hosted visitors from 13 different industry groups and four foreign delegations.



## 2016 Highlights from the Piedmont Research Station

Research Stations serve as an important part of the community. Highlighted below are community activities at Piedmont Research Station located near Salisbury.

- Hosted 30 commodity and community groups for educational events and field days. There were 1,160 attendees for these events.
- Station personnel provided assistance and presenters for an additional 45 agricultural and community events.
- Hosted 14 school groups with 490 total students for tours of the station.
- Provided more than 5,000 pounds of produce to local food banks and partnered with Livingstone College Culinary Institute to provide produce for students to prepare meals for a local shelter.
- More than 20 acres of pollinator plots were established.
- Research and demonstration projects with local Cooperative Extension personnel involved dairy cattle, corn silage, squash, pumpkins, broccoli and rhubarb.





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