

## Duplin County (Rooks Wells)

### Flame Weeder for Organic Row Crop Weed Control



Rooks Wells family owns 100 acres of land, some of which was well suited for growing tobacco. At the age of 15 Rooks got a summer job with a local organic produce farmer. For the next five summers and weekends Rooks learned the ins and outs of organic farming. In 2015, when Rooks was a college freshman he started to farm 15 acres of organic produce on the family farm. His production has grown to 40 acres and he has another 60 acres in transition. But, weed control is one of the hardest things to deal with when growing organic.

With his grant funds he purchased an agricultural flame weeder, which will cut down expenses and allow him to produce a better quality product. Flame weeding basically heats up the water inside the plant, essentially boiling the water and killing the weed. The process is more efficient than synthetic herbicides because the weeds cannot build up a resistance to the heat. With the flame weeder, he will only

have to go over the crop once whereas with traditional cultivators he would have to go over the crop four or more times. This will be a huge savings in fuel cost and time. *(Photo of Flame Weeder)*

He has purchased a flame weeder kit and gas tank, the parts are assembled and the weeder is ready for field use. When putting all the parts together, he had to fabricate the tool bar that holds all the parts. This took a lot longer than expected and was not as easy as planned. If he had to do this again he would buy the whole piece of equipment already put together to reduce the confusion of part fabrication.

Update: He finished the project just in time to use it on a few soybeans last year. He could already see that it will be a huge help for weed control in Organic production. Since he finished it later than expected he was only able to use it once so he wasn't able to calculate a bushel increase. However, this year he plans to use it for corn and soybeans and expects cleaner weed free fields. He anticipates about 5 bushels per acre increase using the flame weeder. It has reduced labor costs tremendously. Instead of hand weeding crops, he can weed an acre with the flamer for about \$12. Hand-picked he would have to pay \$50-70 per acre. That equals a savings of \$3800 to \$5800 per growing season, and an increase of approximately 500 bushels in production.

## Edgecombe County (George Jenkins)

### Plasticulture Implementation



George Jenkins grandfather grew tobacco until 1968 when he sold the farm. It passed through two owners before George purchased it in 2012. George has always wanted to farm but thought that it would be impossible financially.

George began farming on a small scale. He quickly realized that understanding numbers and estimation was crucial to successful farming and George understood numbers. He learned about planting, soil, pesticides and organic applications, and livestock. George has grown corn, sweet potatoes, soybean, and cotton in rotation. He leased another 800 acres and believes that growing sweet potato transplants under plasticulture will significantly help his bottom line and enable him to transition into strawberries and other vegetable crops.



He has been researching plasticulture online for several years, and grew about an acre of sweet potato transplants for the first time using white plastic and drip tape. This method of producing plants is valuable in terms of water conservation and cleanliness, a great plus in growing vegetable crops. Black and white plastic will extend the growing season, enabling an earlier planting time and drought resistance during the hot months. This in turn will help mitigate pest damage and conserve water.



George's first experiment was successful, but very labor intensive without plasticulture equipment. With the grant funds he purchased a plasticulture mulch layer, drip irrigation line and black plastic. He planned to implement the project in the fall after his summer vegetable crop was finished. To be a sustainable producer, he needs value-added crops and as he sees it, plasticulture equipment is necessary for his business plan.

He believes he has an advantage in Edgecombe County as he has a head start in registering organic land and the experience to grow organic produce. He has an organic wholesale buyer and plans to sell some produce to the public at his farm. His farm is situated on a well-traveled road between two towns.

Update: George installed the plastic and drip irrigation but was not able to plant cabbage because of hurricane Florence followed by hurricane Michael. He anticipates the project will be a success in the spring of 2019. He anticipates adding another 15 acres of cabbage. The project should save money because it will better control moisture, help moderate the soil temperature, and minimize sanitation. It should reduce the use of pesticides and release workers to do other projects on the farm.

## Harnett County (Rondal McLamb)

### Vacuum Sealer for Meats



McLamb's Meats produces and processes grain fed cattle and hogs. In an effort to make the meat processing operation more profitable, Rondal McLamb and his two sons plan to incorporate a dual chamber high volume vacuum sealer into their operation. The sealer will save time and make their operation more efficient.

This vacuum sealer will also help to expand their customer base by providing vacuum sealed meat custom labeled (with farm names) for local farmers who have their meat handlers license. They believe there is great need in Harnett County and the surrounding area for this service, which will help local livestock producers sell meat at their farms and farmers markets in the area. Their operation is located in Harnett County very close to the Johnston County and Sampson County lines. They serve customers from Harnett, Johnston, Sampson, Cumberland, Lee, and Wake Counties.



Rondal grew up in a time when farm families raised and killed their own hogs. After graduation from Dunn High School he went to work at Winn Dixie Supermarket and became a certified butcher. He has always farmed and in the early days he used to help friends butcher and process hogs until it was brought to his attention that it was probably not legal. He then decided to open a meat processing business.

Rondal continues to farm 600 acres with his sons Jonathan and Mark. In addition to great cuts of beef and pork, they say they have the best fresh sausage around. Rondal developed their special sausage recipe in 1978 and the seasoning is offered for sale at the store. They also sell a line of homemade barbeque sauce which is his father's personal recipe. They stopped growing tobacco in 2016 and plan to expand the meat business so that his sons and grandchildren will have the opportunity to be involved in agriculture.

The new equipment has helped them expand the amount of beef and pork they process. They purchase 8 to 12 hogs each week from local producers. His son Jonathan sells local beef that they raise. The vacuum sealer works faster and has reduced labor costs. It has also extended the time meat products can keep in the freezer. His customers really like the vacuum packed meats. His business has increased ten percent.

They donated the vacuum sealed meats used for the Farm City Week Chopped Cooking Competition. NC AgVentures and The North Carolina Tobacco Trust Fund Commission were both recognized at this Cooperative Extension event. They also plan to be a tour stop for the Harnett 4-H Farm to Kitchen Program in 2019. In this program, 4-H students visit a different farm each day during the week. Then they go back to the Cooperative Extension kitchen to learn how to cook the locally produced products.

## Forsyth County (Justin Stickland)

Grass-Fed Beef At Old Holler Farm



Old Holler Farm has ties that go back to Will Reynolds (RJ Reynolds Tobacco) in the early 1900's. Today they farm beef and will use their grant funds to expand their production using e-commerce to ship small quantity orders to customers in 34 states.



This is the second grant for Old Holler Farm with NC AgVentures. Last year they received a grant to expand their egg business. They turned a profit of \$28,000 and reinvested that money into the farm by creating a wedding/vacation venue. Justin cleared the grounds around the pond, renovated an old cabin, and an old house that were located on the property. At our last meeting they had booked 19 weddings. This was in addition to their main business farming beef.



He negotiated a lease agreement with a neighboring farm to add about 200 acres of field space. His vision is to remain cow/calf at his farm and send the steer calves to grow at the new leased farm. The beef will be grass-fed and processed at a mature weight when they are 24-30 months.

The beef will be sold in smaller quantities than the traditional  $\frac{1}{4}$ ,  $\frac{1}{2}$  and whole. They have already negotiated great rates

with UPS and FedEx, and will offer several box options.

They purchased a large freezer, boxes, insulators, and ran new wire for the 220v freezer, established a logo with May's Meats Processing, constructed a beautiful, professional website and have actually already generated an average of \$1,400/month in sales.

Update: December was their biggest month selling 24 boxes. Those sales would project them over \$35,000 in beef sales for the 2019 year; income that was not there previously. The holidays are busier times and because it takes several years to raise meat the way they do, it will take careful planning to know when they need to have the freezers full to meet the demand.



## Forsyth County (Natalie Sevin)

### Slanted Deer Fence



Natalie Sevin is a small scale specialty producer that sells organic vegetables and herbs at two farmers markets in Winston Salem. Natalie interned on three separate farms and managed a certified organic farm in Davie County from 2011-2013. She started her own business, Sungold Farm in 2014 on rented land.



She recently purchased seven acres of farmland with four cleared acres. She disassembled two high tunnels from the rented property and moved them to the newly purchased land. The farmland is also popular with deer so Natalie will use the grant funds to erect a fence to discourage deer foraging.



The innovative high tensile slanted fence uses depth perception and an electric current to discourage the deer. Apparently deer have a problem with 3 dimension perception and are confused by the barrier. The new fence is more affordable and has been highly successful in Pennsylvania.

Construction of the slanted fence has not yet begun. "If I had a redo, said Natalie, I would do this project in the wintertime. We are in full production and market mode without much room for anything else."



Update: The wet weather and the snow delayed the project until December. They are waiting for a specialized piece of insulated corner brackets to complete the fence. There is still a lot of infrastructure work to be done: building a wash station, walk-in cooler and working soil and water to build a pond for irrigation.



At the farmers market during the end of the year vendor potluck she swapped information with other farmers on deer protection strategies.

## Harnett County (Paul Johnson)

### Upgrade Poultry Exhaust Fans



Paul Johnson's father is a third generation farmer. When Paul decided to follow in his father's footsteps they created Heritage Farms LLC. They grow cotton, corn, wheat, sweet potatoes, soybeans and tobacco. In 2017 they purchased a poultry farm consisting of four 500 foot houses. Tobacco had been an income staple but poultry provides a steady flow of cash throughout the year. With the grant funds they plan to upgrade the old poultry houses to produce a top quality bird in a safe environment. They have already invested over \$55,000 in upgrades and used the grant funds to purchase exhaust fans.



Exhaust fans are essential for mechanically ventilated poultry houses to perform efficiently. They are the driving force behind the exchange of air that is necessary to create a healthy environment for poultry and farm workers and to avoid excess energy consumption. Inefficient fans waste energy because in hot humid months they under-ventilate and over ventilate in the winter. Inefficient fans cause poor air quality that can stress birds and endanger workers. Birds that are stressed are more susceptible to disease outbreaks and are less efficient in growth and feed efficiency.



The eight 52" Butterfly Fans have been installed in the 4 poultry houses. This resulted in two of the older fans in each house being replaced. They had to wait before installing the fans until the chickens were sold on May 8th. The temperature was already rising to the 90s and the older fans were just not capable of pushing all of the hot air out of the house very efficiently. They had to wait an additional 10 days after the houses were empty before they could get the fans and the work crew on site. This resulted in losing almost 2 weeks of time to prepare for the next flock which arrived on May 25. As a result of this delay, they had to prepare for the new flock in 4 days compared to the usual 3 weeks.

Update: The project was successful. They achieved energy savings however, due to Hurricane Florence they were not able to successfully complete the year due to loss and damage which occurred to the barns. They are still in process of cleanup and repairs.

## Harnett County (Charles Tart)

### Gap Compliant Bean and Pea Sheller for Produce Store



Charles is the fourth generation to operate the family farm. Historically the farm has grown tobacco, cotton and soybeans, but Charles recognized the need to diversify and transitioned to vegetable and fruit production. He also operates a large produce store, Tart's Produce and Strawberry Farm on Highway 421 in Dunn. He sells vegetables and fruits grown on his farm and from other local producers.

Charles plans to purchase two new pea/bean shellers that will be used for his crops plus it is made available to other farms and customers who bring in unshelled beans. Two shellers are needed to meet current and future demand. A modern pea/bean sheller would significantly increase the amount and rate of beans shelled, reduce labor costs associated with running and cleaning the sheller, and ensure compliance with fresh produce food safety requirements GAP certification and FSMA regulations.

The Harnett County Horticulture Agent regularly receives calls from clients asking for local shellers, and Charles is not aware of any other producer offering the service. The shellers attract business to the store which increases sales of other retail items. With the profits from the sheller, Charles plans to construct a commercial-grade kitchen next to the store that would allow him to produce and market his own value-added products.

Thompson Industries has a waiting list and or builds equipment when you order it. Charles did not realize it was going to take a while to get the equipment. He is checking with the other company out of SC to see which one can get him the shelling equipment fastest. He needs the equipment not only for his peas but to help other farmers in the area shell their peas.

Life, sometimes just don't go as you planned. Charles grandchild was born premature and was in the hospital for 103 days. They found out today that his wife will need surgery to remove tumors.

Update: Charles is planning trip to Florida in April to pick up plants and will stop in George on his return to pick up the pea/bean sheller. He says it will be here for the bean harvest season.

# Harnett County (David Pflugfelder)

## Hog Feeders and Waterers



David Pflugfelder is a fourth generation farmer who purchased his own land in 2010 to raise poultry, eggs and pork for family consumption. When he separated from USAF in 2012, farming became his fulltime career. The initial 20 egg layers and 4 hogs expanded to over 3700 pasture raised broilers, 75 turkeys, 4 lambs, 30 hogs and 150 egg layers. The animals are housed in hoop houses, egg mobiles and Salatin style chicken tractors that are all built on site. With the grant funds he purchased equipment to expand the pastured raised hogs operation.

The project will allow larger amounts of feed and water to be accessible to the animals over a longer period of time. This project will decrease labor and increase the number of hogs raised. The hogs will be marketed through a local pasture pork co-op.



The feeders and waterers have been ordered and are awaiting pickup at the Pennsylvania store for delivery to their farm. On May 19th they hosted the Harnett County Youth Leadership course at CATHIS Farm. There were 15 students and 2 instructors. On July 10th they hosted a teen 4H camp from Moore County at the Farm.

Update: The project greatly reduced the labor in taking care of their pigs. They estimate that the project produced 1500 lbs of pork with a market value of \$8000. They plan to continue fencing in new paddocks and build a better farrowing area.





# Harnett County Community Grant (Agent Brian Parrish, Project Manager)

Alfalfa: A High Value Cash Crop Alternative for Current and Former Tobacco Growers in North Carolina.



This is an Extension research project to see if an Alfalfa/Bermuda mixture can be successfully grown in the Coastal Plains of NC. Alfalfa allows producers to grow their own nitrogen, minimize ash content from soil contamination and save money on expensive protein supplements.

In the 50's and 60's alfalfa was grown across the South, but alfalfa acreage waned due to the availability of cheap nitrogen and cheap grain. Also, the alfalfa weevil caused persistent problems. However, times have changed, nitrogen prices have jumped through the ceiling, insect control options are much less limiting and forage quality has never been more important. Each of the participating counties is growing alfalfa in pure stands, and in 2017 a few demonstration plots inter-seeded Bermuda grass with alfalfa. If successful, this mixture could open up a new market for alfalfa/Bermuda grass mixed hay,

targeting the very large NC horse hay market. Here is a link about this subject from the University of Georgia:

[www.youtube.com/watch?v+KycFVqClvOc](http://www.youtube.com/watch?v+KycFVqClvOc)

The research goals are to evaluate alfalfa-Bermuda grass performance (production and nutritive value) in different areas of Harnett and on different soil types. In addition, to learn the best management practices needed for growing alfalfa in the region. There are several questions to be researched: how to prepare the seedbed, is there a need to spray or simply mow, explore options for weed management, what are the preferred soil types, how long with the stand last, can the nutrient needs be supplied with poultry litter and what is the nutrient value of alfalfa-Bermuda grass mixtures?

Update: Nine hay producers planted 67 acres of alfalfa inter-seeded in Bermudagrass. The new alfalfa component should help these producers increase profits by a minimum of \$300 dollars per acre x 67 acres = \$20,100 per year. Five of the producers are current or former tobacco farmers and four of the farmers are also cattle producers. Team members included Miguel Castillo (Crop and Soil Sciences), Paul Gonzalez (Sampson) Emily Mueller (Wake), Brian Parrish (Harnett), Dan Wells (Johnston) Extension.

Agent Brian Parrish is the project manager; he hosted an Alfalfa-Bermuda grass hayfield Conference August 23, 2018 in Lillington, NC. The conference is for farmers and included presentations on agronomics, pest management, alfalfa production costs, and market potential. After dinner the participants will visit demo plots. New demo plots will be planted in the fall of 2018 and harvested in 2019.

**Alfalfa-Bermudagrass Hayfield Conference**  
August 23, 2018  
Harnett Commons Area, Lillington, NC  
(309 W. Cornelia, Harnett Blvd, Lillington, NC)



**Agenda:**

2:00 pm	Registration
2:30 pm	Welcome and Remarks
2:35 pm	Re-introducing alfalfa in NC: Where does it fit? Miguel Castillo, NC State
3:00 pm	Alfalfa-Bermudagrass: Agronomics and pest management Dennis Hancock, UGA
3:30 pm	Break and visit with Sponsors
4:00 pm	AgVentures alfalfa grant / project update Brian Parrish, NCCES
4:10 pm	Alfalfa-Bermudagrass: Production costs and the hay market Dennis Hancock, UGA
4:40 pm	Round table
5:00 pm	Sponsored Dinner
6:00 pm	Visit demo plots

**Pre-registration required (Free)**  
Click here:   
**Program limited to 150 participants**

**NC COOPERATIVE EXTENSION** For questions contact Ext. Offices: [Harnett](#), [Johnston](#), [Sampson](#), and [Wake](#)

## Johnston County (Joshua and April Phillips)

### Sonlight Farms Educational Animal Barn



April is the daughter of a tobacco farmer (Joey Holland) and her husband Josh is the farm manager. Josh also raises tobacco plants in greenhouses for Alliance One and Philip Morris. Together, Holland Farms and Josh Phillips grow over 900,000 pounds of contracted tobacco. Their plans are to one day buy Holland Farms when April's father retires. In 2016 they decided to diversify, and established Sonlight Farms, LLC in Kenly. Their goal was to provide a family friendly place to learn about agriculture.



This past season visitors enjoyed a hayride, a corn crib, an 80 foot pipe slide, an 8 acre corn maze, playground area and a crop education area. April has a degree in education and she leads the groups. Over 2000 visitors came to their farm in 2017 but one thing was missing, *animals*. Sonlight Farms used the grant funds to build an animal barn and expand their livestock.



The construction was completed right before hurricane Florence was about to hit. They found a very tame cow (about 7 months old who had been bottle fed) to join the Sonlight family and their donkey had a foal (a jenny) which they are working on taming so she can be on display as well.

Sonlight farm charges admission and offers t-shirts and concessions for sale. But mostly they want children to know that the hamburger, sweet potatoes and peas they ate for dinner were not produced at Walmart and they want to inspire young people to enter the agriculture industry.



Their farm opened September 22 to the public. They are open every Saturday from 10am - 5pm and during the week for school groups, and they offered three special event days - Good Ole' Daze Sept 29 - Farm Daze - Oct 6 - Blackout Challenge Oct. 27.

Update: The number of school children that visited the farm almost doubled (742 students in 2017 and 1301 students in 2018). The animal barn was the highlight of all the field trips this year! Also, they had two calves born this winter. The animal barn provides a place for the heifers and calves to stay until they are a few weeks old, and to stay dry on rainy days.

The barn has gained a lot of attention from families wanting pictures taken. They charged a fee for these clients to use the farm (and animal barn) for pictures. Engaged couples are asking about using the barn for weddings. They have booked one wedding for the summer of 2019 and April is in discussion with two other brides. Sonlight farm also participated in a farm tour with the North Carolina Agritourism Networking Association last August. The estimated new income generated is \$13,000.

## Johnston County (Cameron Ennis)

### From Farm to Market



Cameron Ennis grew up on a Century farm and graduated from NC State. He has been farming fulltime with his father for the last 4 years. Along with growing traditional small grain crops he is transitioning acres into produce. Last year he produced 8 acres of watermelons and marketed it through a broker at the State Farmer's Market in Raleigh. He grows his own seedlings in the greenhouse and enjoys the process of transplanting and harvesting. He has had a positive experience growing produce and plans to steadily increase his production of produce in years to come.



With the grant funds he will purchase a flatbed truck for hauling watermelons and small grains to market. He harvests 5 days a week and hauls them the next morning to Raleigh. On an average morning they will transport 600-700 watermelons. This sometimes requires 3 trips. The right truck would reduce, time, labor and fuel. It would also allow him to expand his market area, as his produce production grows.

Cameron is still in the searching stage. He knows exactly what he needs, a grain truck with removable sides and a flatbed dump!



Update: Cameron was fortunate to obtain a 2-ton 1995 Ford F-800 truck, which he used in the 2018 farming season to haul his farm produce and saved paying another driver to haul the farm products.. He produced 7 acres of watermelons and 200 acres of soybeans valued at \$50,000. He estimates that he reduced his delivery costs by \$3000. *(Photos of the truck and Ennis farm)*

## Johnston County (William Byrd Jr.)

### Expansion of Cattle Farm for Meat Sales



William Byrd Jr. purchased his first cow at the age of 13 and has been cattle farming ever since. He loves working on the land that his grandfather and father farmed. William served as the president of the Johnston County Cattlemen's Association and has been certified in pork quality assurance and beef quality assurance.

Although the farm has raised tobacco, soybeans, cucumbers, cattle, hogs, hay, corn and goats, with the grant funds he will purchase equipment to expand his beef and pork production. William purchased a vinyl-coated steel storage shed to store meat. The rake and disc mower will be used to cut hay to feed the cattle.



In addition to hay William collects spent grain from local micro-breweries and feeds it to his cattle. Breweries have a byproduct of "spent grains" (the barley and other grains used to make beer are left over after the brewing process). These grains are known as wet brewer's grain which is one of the oldest feeds fed to livestock by farmers. The grain is nutritious and the cattle love it.

William has had great results in the quality of meat. His beef logo is already on the menu at Honest Abe's restaurant in Cary. The owner, of Honest Abe also owns an interest in the brewery where William collects spent grain. He is interested in going full circle by serving beef fed with that grain.



This connection to the feed source and the end user created a unique marketing plan. William developed a website: [Brewers Best Beef and Meats](http://www.brewersbestbeefandmeats.com/) Where Beef and Beer Meet. He would like to have a monthly contract with at least three restaurants and will continue to expand his beef and pork production.

Update: William plans to convert his new building into a store front for selling meat. He participated in several vendor events with local breweries where they shared information about their business and the NC AgVentures Grant program. He estimates that he grew more than

45 acres of hay and sold over 1500 pounds of pork and 2000 pounds of beef which generated \$4000 in new income. (<https://www.brewersbestbeefandmeats.com/>)

## Johnston County (Timmy and Roxie Creech)

### Crooked Row Irrigation and Plastic Mulch



Timmy met Roxie at a roadside produce stand owned by Roxie's father. They married and began farming in 2012, and opened a roadside stand called *Crooked Row Produce*. The first year they used a 10x10 tent to cover the produce stand, in 2013 they upgraded with an 18x20 carport and in 2014 they upgraded again to a 30x40 shelter in the same location.



Over the years they supplemented what they grew by purchasing produce from wholesale suppliers in the area, but their goal is to grow more and more of their own product. Last year they sold strawberries, azaleas, tomatoes, squash, watermelons, cantaloupes, peaches, peas, butter beans, blueberries, pumpkins, mums, collards, greens, Christmas trees, candy, pecans and more.

They farm on land owned by Roxie's father. They put in a 3.12 acre pond as a water source. With the grant funds they purchased irrigation equipment to expand their vegetable crops.

They purchased a plastic mulch layer, transplanter, and the whole drip irrigation system. (They decided to go with the automated system.) With the new equipment they planted cantaloupes, tomatoes and watermelons.



*(The top photos show the pond and irrigation. The lower photo's show the plastic mulch in the crop beds, a melon on the vine and mums.)*

Update: They produced 12 acres of produce using the irrigation system. The new irrigation system saved time and money by not having to overhead water. They estimated the current market value of the crops produced at \$50,000 in new income.



## Johnston County (Richard Barrow)

### Organic Produce Expansion and Transition



Rick Barrow has been farming for over 30 years. He grows tobacco, soybeans, organic squash, and raises cows and goats. He plans to expand his organic vegetable production and will use the grant funds to purchase a vacuum planter and drip irrigation.

This year he plans to expand his organic production with cabbage, broccoli, cucumbers and squash. The vegetable crops are well-suited for a small-scale operation and the initial investment is relatively low as he has the tractors, trailers, sprayers and labor available. The harvesting can be performed by current farm employees and will extend their employment opportunities.

The rain in May held him back from being able to prepare the field for organic produce which caused the grass to grow. He then had to hire more workers to chop up the grass by hand. He has purchased a 4 row planter and used it to plant squash.



Update: Due to the hurricane and the very wet weather we had this past year, Rick was not able to make any profit off the project. With so much rain and the weeds growing very rapidly in the organic produce he had to hire extra help just to try and keep it under control. For the upcoming year he plans to add an organic cooler to the farm. He also plans to put plastic down with the plants to try and cut back on needing so much labor to chop the weeds.



## Johnston County (Ricky Earl and Scarlett Joyner)

### Microgreen Conversion

Ricky and Scarlett are a father daughter team that plans to turn an old tobacco greenhouse into a microgreens operation. They used to raise tobacco from seedling to selling the cured product from their barns. After the buyout, they stopped all tobacco operations and the greenhouse has been unused for 5 years.

As a father/daughter team they believe their combined experiences and ideas will lead to making this a successful venture. Rick Joyner has Masters in Agricultural Education. He taught agricultural education for 32 years at Southern Wayne high school, and worked his entire life on a farm. Scarlett taught 4 years of agricultural education and served as an FFA advisor. The idea to produce microgreens cropped up while Scarlett was attending the Sustainable Agriculture Conference in Durham.

Microgreens are sown and harvested on a quicker time frame 15-20 days. Quicker product generation leads to quicker profits. They believe that the use of greenhouse hydroponics will provide lucrative options for traditionally off seasons. They have determined a list of climatically suitable and profitable candidates to populate the greenhouse such as basil, gourmet mushrooms and landscaping grasses.

Originally the restaurant contacts they had made were in Durham but they have been able to utilize Tiffany Creech, of Wayne County Development Alliance and her networks to make connections in Raleigh, Kinston and Clayton. Microgreen samples have been dropped at restaurants to give their product a try.

Tables for production were purchased and assembled. A commercial sink, refrigerator and packaging for products and for post-harvest have been purchased with grant money. The original curtains have been replaced, and fan motors that burnt out long ago were replaced.

Update: The majority of the first harvest was lost to mold followed by pests. They hope to find a reliable student to make it their SAE so they can increase production and gain more local customers.



## Lenoir County Community Grant (Agent Stephen Killelte, Project Manager)

### Tobacco Float Bed Tray Steamer



There are more than 400 listed tobacco farms in Lenoir County and over 7,500 acres of harvested tobacco. This community project used the grant funds to purchase a steamer to sanitize float trays and keep tobacco transplants and vegetable plants healthy. Chemical methods for cleaning trays have been deemed unacceptable and farmers are in need of another way to ensure that they are taking all measures to maintain a clean operation.

The Float Bed Tray Steamer is available to all farmers for a \$100 service fee that will be used to cover maintenance. A new unit cost ten to twenty thousand and the farmers will only use it once or twice a year. Renting a steamer will save \$9000 over a five-year period plus the cost of chemicals and maintenance.

All community members are neighborly and support each other's operation in a respectful manner. There are currently nine farms collaborating on this project. All of the farms are current or former

tobacco growers. Together they farm more than 11,000 acres and employ more than 120 tobacco workers.

The Steamer will be introduced to the community at a workshop this fall. Postcards will be sent to inform the farmers of the equipment and flyers will be displayed at local soil and water, NRCS and FSA offices. Extension will demonstrate the steamer at the annual Tobacco GAP trainings that are required for farmers to attend.

Update: The unit was displayed at the local GAP meeting with nearly 150 growers in attendance.



## Martin County (Jason Bunting) Hemp Innovation



Jason Bunting is a 4th generation farmer. In the past the farm produced tobacco, row crops and poultry. Due the limited acreage of the farm, tobacco is no longer produced and the poultry operation ceased in 2011. The family wanted the farm to continue. Jason grows corn, wheat and beans but was looking for a higher value crop.

Jason received a hemp license, and will use the grant award to convert the poultry house into an indoor year-round hemp production facility. One third of the space will be an enclosed nursery area which will produce plants to transplant into the field. The existing tobacco transplanter and row-bedder will be utilized for field application. Another group of plants will mature in the greenhouse.

The remaining space will be retrofitted and used as a drying facility for mature hemp. The plants will hang upside down on cables. The curtain and fans will control the air drying process. The mature plants need to be dried to 8-10% moisture

Jason has completed fabrication of the cloning room and the Mother plant room. He transferred some plants to the field and others are ready to start flowering in the Mother room. Most of the process went as expected except that on 5/18/18 a thief cut the padlocks and stole the majority of his Mother plants, lights, fans, air conditioner and tools he was using to convert the rooms. He now knows that he should have had security cameras in place in addition to padlocks.

Update: Although the theft hampered the final results, the project still demonstrated that the concept is feasible and the results are measurable. The indoor enclosure of the poultry house was very functional for the propagation of mother plants and field clones. Self-cloning results demonstrated a savings of about \$2.50/plant. Time of planting determines clone population needs; average would range from 1,000 to 2,000 per acre. With no insurance available, cost savings are a major strategy.

Jason plans to use the profits from last year to complete the grow-out room and provide more clone plants for the field and prepare more drying room for harvested plants. In early June Jason talked and met with area potential growers and helped organize a meeting in Tarboro with a potential product purchasing agent.



*(Photos of poultry house conversion and hemp plants)*

## Martin County (Stephen Lilley) Gin Byproduct Applicator



Stephen Lilley says his family farm is rooted in Martin County where they grew tobacco until the buyout, when they transitioned to row crops. To increase organic matter into their sandy coastal plains soils, Stephen will use the grant award to purchase a pull-type spreader to apply "gin trash" on their fields to improve yields.

The by product from a cotton gin consists of dirt, leaves and cotton lint. This product is considered gin trash. However, in time this byproduct composts to create a highly organic product. Organic matter is low in the sandy coastal plains. An application of gin trash would improve the soil and improve crop yields.



Stephen plans to use the spreader on his own operation first. Other farmers in the area are using chicken litter but composted gin trash is a more attractive alternative because he has an abundance of the material and his farm is a short drive from the cotton gin facility.



Stephen believes the operation will grow as other farmers see his success and he may be able to contract with other farms to spread the composted material on their farms with the spreader. He has already reached out to a local golf course and they are interested.

So far, Stephen has hired a truck and driver to move the composted gin trash from the cotton gin to the farm; they have already moved a few loads. They have also found and committed to buy a spreader from Louisiana. They are currently waiting for the spreader to arrive.



Update: The spreader did not arrive until March 2019, so he will not see impacts until next year. On small pilot projects, using composted gin trash Stephen had seen better crop yields, and believes the spreader will increase crop yields on a larger scale.

*(The top photo is gin spreader, below is gin trash compost, the lower photos of cotton and peanuts are crops on the Lilley farm.)*

## Rockingham County (Brenda Sutton)

### Fogwood Mushroom Trail



Brenda and her husband Rex grew up picking tobacco, but today they grow specialty mushrooms. They plan to use their grant funds to develop the Fogwood Mushroom Trail through 20 acres of woodland. The trail will provide access to hardwood trees to harvest Shiitake Mushroom, to provide access for wild mushroom foraging and education.



Access to hardwood trees to harvest for Shiitake Mushroom production is critical to continue their successful operation. Each winter, their harvest approximately 400 logs for the new log inoculation. About 20 acres of the farm is former tobacco land that has not been farmed in over 50 years. There is evidence of some old road beds on the property. However, trees and noxious undergrowth (like briars) make passage impossible. They need access to this timber to selectively harvest trees for future years.



North Carolina and Virginia chefs are expressing more interest in purchasing wild mushrooms. Brenda and Rex have already completed the required Wild Mushroom Safety Course Certification (#277) and discovered approved wild mushrooms in their woodlands. Passable trails and cleared undergrowth will give them access to forage and harvest wild mushrooms to sell to chefs who are already customers.

They had a new survey of the property to insure that the trail near property lines is distinctly within their property. They purchased a Toro Brush Cutter. Phase one of the trail has been cut. A private horticulture consultant walked the initial trail and helped identify and temporarily mark specific trees and plants that they will later label in more permanent manner. They have purchased herbicide and vinegar, as well as a sprayer, to begin control of briars, saplings, etc. along the trail.



On July 12th, they hosted a Soil and Water Conservation youth group. They learned about the farming operation and walked the first phase of the trail--guided by a consultant--to learn about the forest over 50 years since it was a tobacco field.

Update: The first phase of the trail complete. They will continue over the next few years to add to the trail. They met their objectives (1) easier access to trees to harvest for Shiitake mushroom logs; (2) foraging for wild mushrooms; and (3) teaching others about former tobacco fields that are now wooded areas

# Rockingham County (Robert "Bobby" Coltrane)

## Day Neutral Strawberry Production



Bobby started farming tobacco with his uncle when he was 12 years old. He purchased his own farm in 1982, where he grows flowers and vegetable plants. With the grant funds he plans to expand his production of Day Neutral Strawberries that will provide winter season strawberries for Thanksgiving, Christmas and Valentine's Day. *(Photo of high tunnel under construction)*

Bobby is using the grant funds to complete a 60' x 96' high tunnel that he started to construct in 2016. He has installed the side posts and bows with a gutter connect in the middle so the project is already in progress. By completing this project, he will be able to more than triple his indoor strawberry production.



He will plant the strawberries in the ground in a high tunnel setting, which means he can reduce expenses without adding propane heaters. He will be using solar heat and row covers to help heat the plants during the winter months. When completed, he will be able to supply customers with strawberries on Thanksgiving, Christmas and Valentine's Day.

He got behind the project due to health issues. His gall bladder was removed on May 30. Not being able to do a lot of lifting put him in a bind and slowed the progress. The side walls, bows, purlins, cross members, 4 roll up doors, 2 walk in doors, and end walls have been completed on the greenhouse.



Update: He had an open house when the strawberries were planted and talked with other farmers at the curb market on Saturday mornings. Unfortunately, there was a major snowstorm in his region that destroyed half of the structure. Without the greenhouse, the ground where the strawberries are planted will not be warm to produce a crop this year. *(Photo of Bobby at the market and other crops produced on the Coltrane farm)*



## Stoke County Community Grant

Stokes County Extension Director Carl Mitchell, Project Manager

Stokes Regional Mobile Poultry



Several farmers in the Stokes community have found success in raising small flocks of poultry. But processing the birds had become a challenge. The poultry processing facility in Marion was a three-hour drive and created an extra cost to finish the product. The area poultry handler's inspector recommended attaining a mobile poultry processing unit that could be shared.

Stokes County Cooperative Extension will house and manage the equipment rental. Farm Bureau has pledged one thousand dollars initially and is willing to help out to advance the project over time. Agents and volunteers will maintain the equipment and use it as an educational tool.



Poultry producers in Stokes and surrounding counties (Surry, Rockingham, Forsyth, Yadkin, and Guilford) will have access to the unit. Four farms have stated that they will rent the equipment with many more expected as awareness of the equipment is raised. One school has committed to using the equipment for student training and community service.



Susan Roudabush, an Ag teacher with Stokes County schools, reached out to Carl for help with a chicken project. They have a group of ten students that take care of the chickens from birth to slaughter. They take the chicks that are hatched out from the embryology project with the second graders and grow them, slaughter and process about 65 chickens. The meat is donated to the Outreach ministry or to families at the school.

Susan said it is amazing the interest the children had. They love the fact that they go full circle from hatching to processing. But they couldn't do it without Carl. He volunteered to process the chickens at his farm. Susan said, "He genuinely listens to the kids and helps them accomplish their goals. It takes a village to raise a child. Carl is part of our village and we are thankful for him!"

Poultry processing classes will be held in partnership with Forsyth Technical Community College Stokes Campus to educate users and empower new farmers to begin processing their own poultry. Carl's vision is to have this equipment available for farmers for many years to come. In order to best meet their needs, surveys will be performed to assess any necessary changes to equipment or new equipment needs. A small rental fee will be applied (\$25/day) to budget for service, equipment replacement, and improvements.

Carl hosted a workshop to demonstrate the processing equipment and to train local producers; the equipment was rented 14 times in the first year. *(Photos are from the equipment demonstration on June 21, 2018.)*

## Surry County (Jamie and Augusto Renzi)

Kalettes, North Carolina's Newest Venture



RomaReady is a new farm on old tobacco land that produces fresh chemical free vegetables for local restaurants. Augusto Renzi grew up farming in Italy. Jamie was raised in Asia where she raised and trained horses. They both attended Surry Community College and received degrees in horticulture. Jamie also works for Surry Community College at the satellite campus in Pilot Mountain where she manages the greenhouse and teaches continuing education, preparing tobacco farmers and others how to grow, maintain and transition their farms. Jamie has also been GAP trained.

*(Photo credit: Johnny's Selected Seeds, More information about Kalettes is available online at <http://www.johnnyseeds.com/c-1066-kalettes.aspx>.)*

The grant funds will be used to scale up their pilot production of Kalettes, a new vegetable that is a cross between kale and Brussel sprouts. This vegetable was first cross bred in Europe. They started reading about Kalettes when they were in school and began to experiment with different varieties. They grow on the stem of a plant which is hardy and does not require much attention, but they do prefer high nitrogen especially when they start to produce the small florets.

The rain put them behind. The soil has been tested, cleaned and prepped with organic matter/compost. This crop will go in the field in August. A 4-H group (35 youth) from Mount Pilot visited the farm on May 15<sup>th</sup>.

Update: The first crop was planted but harsh weather destroyed the crop before it was ready to harvest. Jamie and Augusto have had some other events that kept them from moving forward. Hopefully they will be able to start again this year.

## Wayne County (Emily Odom)

### Packing Barn and Flower Cooler



Emily says she fell into farming when she married JR. They purchased Odom Farming Co. in 2010. The land had originally been farmed by his grandfather and later rented to other farmers. It is a former tobacco and row crop farm transitioned into an agritourism farm with strawberries in the spring, sunflowers and a CSA in the summer and corn maze in the fall.

When the sunflowers are in bloom Emily makes bouquets, offers them as an option to her CSA customers and allows customers to walk through the field and pick their own. She hopes eventually to build a wholesale market.



With the grant funds they plan to build a better packing facility with a walk in cooler. They decided to go with a pole barn instead of a metal building. It would cost a little more, but in the end would provide more shelter area that could be used during strawberry season, for the CSA, for festivals, for cut flowers they are planning to introduce, and the corn maze/pumpkin patch which is the biggest money maker.

The shelter is complete; the biggest roadblock was time. Changing from a metal structure to a pole barn meant someone had to put it up. They were also on a time crunch because they were trying to get it completed before the CSA got started. Their biggest need was something more weather proof than what they had.



Update: The rain this year pushed the timeline back. Then to add insult to injury they were faced with Hurricane Florence in September. They ended up with 20 inches of rain over four days with consistent wind the entire time. The farm flooded and the shelter sustained damage including tin peeling off and the entire structure leaning. Luckily they had included the structure on their insurance so they recouped all of that cost. They are still waiting to move the cooler building, but they were able to purchase used due to the excessive rains during the late fall and winter.



The shelter has really given the place a new energy. Customers are excited to see something new. It's been an invaluable benefit to have somewhere to get out of the weather. They've booked parties and field trips this year; the shelter provides a place to escape from the rain. It worked great for the CSA program.

The versatility of the open shelter is perfect for selling produce and flowers in the spring/summer, and hosting events, field trips and meetings; plus it provides a place to store trailers from the rain.

## Wayne County (Matthew Sanderson)

### Going Hog Wild

Sanderson farm encompasses 950 acres of cropland, 60 are used in flue-cured tobacco. Over the last three years the farm has gone from having no issues with feral wild hogs to having whole fields destroyed overnight. With the grant funds Matthew will purchase a Boarbuster trapping system to help his farm.

The Boarbuster trapping system is a research based, cutting-edge trapping system developed as a solution for managing the nation's exploding feral hog problems. The system is portable so Matthew can provide a service to other farmers in surrounding counties. The three key problem areas that this trap will aid in are as follows: 1) Lower the field damage from rooting and wallowing, 2) Reduce damage and disease risk to livestock, 3) Reduce damage to wildlife habitat, waterways and forest seedlings and trees.

Feral pigs reach sexual maturity at four to six months of age. They can have litters of up to twelve and can produce two to three litters a year. Unlike other rapid breeding species such as rabbits, wild hogs have no real predator. Hunting and conventional trapping systems have an insufficient kill/capture rate.



The BoarBuster system unlike traditional trapping systems is completely suspended in the air limiting the trap-shy behavior that cage traps pose. Feral hogs are allowed to enter the trap from any direction without crossing a trap threshold or navigating around perimeter panels. It allows significant reduction in baiting periods as the hogs adjust to the system more quickly. The system uses motion sensors to monitor the trap site and notifies the user by text with a high definition image when activity is occurring. This reduces the potential to run off the animals from human presence. The state of the art camera system provides live streaming video to your smartphone or computer allowing you to determine the perfect time to deploy the trap with a touch of a button.



Update: They successfully completed the grant project by the end of the year trapping 76 feral hogs despite being unable to do late fall trapping due to hurricane Florence. This year they did not have to do any replanting and no late season tassel damage that they were experiencing for the last several years in their corn crop. With the high cost of seed corn, fuel, wear on the equipment, not to mention crop yield loss, they estimate that it saved \$20,000. They also did an extensive amount of trapping for a farmer in Johnston County.

They are in the process of baiting areas to get the feral swine coming to centralized areas in large numbers so that they will have successful spring trapping to hold off damage during the planting season. They spoke with local farmers and concerned landowners in and around the community, and taken many to see the trap set up, and some after it has caught a sounder of swine. They are also working to try to get an article with Southeast Farm Press, Farm Journal, and/or Successful Farming to try to get some more publicity and information out to others dealing with the same problems.



## Wilson County (Walker Shelton and Thomas Webb)

### Greenhouse Production of Pepper Transplants



Walker Shelton and Thomas Webb grew up working on their family's tobacco farms. Both young men are in their mid-twenties and have degrees in Agriculture. In 2014 they started growing cucumbers and in 2016 they added peppers. The grant funds will be used to purchase and set-up a two hundred foot greenhouse that will be used for raising quality pepper transplants.

Planters Produce Company is a unique farming operation in comparison to the row crop farms in the surrounding area that rely on the traditional income of tobacco. Cucumber production is very rewarding for Planters Produce because of the quick cash flow and profits that rival, and can surpass tobacco income. The cucumber crop generally takes six to eight weeks to go from germination to harvest, and Mt. Olive pays weekly during harvest.

Pepper production is attractive because the potential for profit is even higher than cucumbers, but carries on the additional burdens of a longer growing season and higher input costs. Mt. Olive pays on a bi-weekly schedule for peppers, which makes it, and cucumbers, very attractive because it provides cash flow to cover the high cost of harvest labor.

Planters Produce sells its pickling cucumber and pepper crops to Mt. Olive Pickle Company on contract. Although the price for growing vegetables for the processor market is less than selling to the fresh market, they feel the tradeoff of price is more than made up for by the security of selling with a reputable, local company like Mt. Olive Pickle.

The greenhouse is high-sided with a minimum of 5.0' sidewalls, because the transplants are grown on raised "T-rails", and watered with overhead irrigation. The greenhouse fits well in Planters Produce's current operation, because it will provide more work for at least two workers during February and March, which is a slow period, and decrease the costs of obtaining pepper transplants.

On April 11, the horticulture class from Bedding field High School came out and took a tour of the greenhouse. There were 15 students and a teacher in the group. The students are growing container plants in a school greenhouse, and found the field trip very informative.

Update: Despite going over budget, the project was successful. They were able to produce their own transplants at a lower cost and ensure the transplants would be ready in a timely manner. They plan to continue to raise plants in the greenhouse this year and try and to pay down debt. The greenhouse has also opened up other production opportunities that they have yet to explore. They reduced cost by growing their own transplants and saved \$8000. They produced roughly 1 million pounds of pepper with an estimated market value of \$400,000.

## Yadkin County (Chad and Brenda Blake, Farm Managers)

### Greenhouse Diversity



The Blake Farm is family farm operation that supports four families as fulltime farmers. They began growing tobacco in 1978 and did not stop until 2012. At that time they built 8 new broiler houses for Tyson Foods and the two elder sons began helping with the management of these houses. They have since added more poultry houses and produce 400 acres of corn for grain, 5 acres of sweet corn, 100 acres of soybeans and harvest hay from 150 acres of grassland. The two oldest sons are married and live on the farm with their families and the two younger sons want to stay and work on the farm. So, diversification is a necessity. Blake's Farm will use the grant to convert three tobacco greenhouses for hanging baskets and bedding plants.

The Blake's 13 year old son came up with the idea to do something with the greenhouses. After talking to NCDA and visiting other farms they decided that flowers would be a good option. They had problems getting the plastic put on the frame due to LOTS of wind and rain, but the greenhouse is up and this spring has been extremely busy. They would like to have a more automated fertilization system, but the automatic water supply for the plants works great.

They have had visitors every day to the farm with lots of children. They always try to talk to them about plants and give them a vegetable plant to grow at home. They sold a little over 2100 hanging baskets and 1000 six packs and 4 cups by Mother's Day weekend. It was a great turnout for social media and word of mouth advertisement.

Update: The Blake's completed the remodeling of their tobacco greenhouse. They were able to produce 1200

hanging baskets and a total of 300 six inch pots, 200 four inch pots, and about 200 flats of bedding and vegetable plants with 36 plants to each flat. They sold all of these plants retail, on the farm. They completed most of the conversion work themselves and were able to save a considerable amount of money which contributed to a profit this year of \$18,000 extra income. With the weather we have had outside in 2018 it looks like growing plants inside will provide the Blake's another source of income. This year the Blake's plan to grow 2100 hanging baskets along with additional 4", 6" pots and lots of flats.

## Surry County (Michelle and Justin McKinney)

Dehydrator for Jeem Farm LLC



Jeem Farms has been in the family for over 100 years and was tobacco land until 1995, when they transitioned to tomatoes. With the grant funds they plan to add a processing facility and dehydrator. The dehydrator will be used to create a value-added product Tomato Chips.

Talking with customers at their greenhouse and the farmers market, Michelle and Justin McKinney have determined that there is a market for dehydrated tomatoes.



They did a trial run with a small borrowed dehydrator, and gave free samples. The chips were a huge hit. Some of the customers came back to the booth the same day asking for more. They plan to offer tomato chips to their customers at the greenhouse and farmers market, and then expand to restaurants.

Michele and Justin were not expecting such a busy season, but they are grateful and opted to

hold off construction of the new facility until the end of July. The new facility and dehydrator should be ready for the next tomato season which starts up again in the early part of March.

Update: Michele and Justin are confident this will be a successful project. They don't have examples yet since the project won't officially begin until the 2019 season is underway. They plan to begin dehydrating tomatoes that would otherwise be considered waste. They will begin marketing the tomatoes once they've been dehydrated and have samples to offer.

