

POULTRY INDUSTRY NEWSLETTER

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Fall 2017

4-H Congress Competition, Summer 2017

This year's 4-H Congress yielded an amazing group of Turkey and Chicken Char-Grill chefs. On a windy day, the competitors fought the odds and kept their cool while firing up their coals. From "bourbon" glazed turkey breast to Greek spiced chicken paired with a homemade tzatziki dipping sauce, the outdoor Char-Grill competitions allowed participants to show off their grilling skills. The judges' decisions were based on fire safety, cleanliness, originality, taste, and presentation. The senior competitors gave short presentations highlighting facts about their cooked product including nutrition and agricultural statistics related to North Carolina. Richard Hoyle with NCDA&CS, served as a judge and stated, "As long as the meat is cooked properly and to complete doneness, I have no problem eating a sample or two". He also added that the final results were "so close which made it hard to decide on a winner". The senior finalists attending the national competition in Kentucky are Dy'Quan Freeman from Gates County and Adrianna Little from Johnston County. These participants will showcase their recipes and represent North Carolina 4-H.

Other poultry related competitions during this year's congress were Egg Cookery and Poultry Presentations. For each of these indoor activities, students were given opportunities to focus on the points of poultry they chose to highlight. Some chose the Egg Cookery competition where an egg dish is made while a presentation is given. One might perceive this as the most difficult of the competitions because the presenter has to prepare the dish safely and correctly while being engaged to a panel of judges. They must exhibit their knowledge of the dish while properly executing the preparation and ending with the final touches. This year's Senior division winner, Dana Jakubielski, will also have the opportunity to attend the 4-H National Competition in the fall. Poultry Presentations during 4-H Congress always delivers a group of competitors with a diverse subject matter they choose to present such as poultry predators and biosecurity. Each displayed a clear and concise point of view while establishing their will also travel to Kentucky in the fall for the National 4-H Competition.



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Egg Quality School for NC Small Producers

Dr. Ken Anderson, an extension professor, hosted the annual Egg Quality School for Small Producers. This year's workshop was attended by nineteen small producers from across the state. The workshop comprehensively covered various topics regarding egg grading, egg quality, and egg handling. It helped alleviate some misperceptions that small egg producers may have regarding North Carolina egg laws. Each attendee was trained how to grade eggs based on size and exterior shell conditions. They were trained how to grade eggs by outward appearance which is key in consumers' consideration when buying a product. Interior quality was demonstrated through a process called candling to see any inclusions that might be present within the shell. All of these components enable producers to properly label all packing materials. Richard Hoyle and Bill Bruton with NCDA&CS participated as well and provided other information and skills necessary for producers to be properly informed and knowledgeable about the products they are selling. At the end of the workshop, all attendees received a certificate stating they completed the course.



NC State PDPS hosts annual Poultry Science Summer Institute Hannah Lunsford

On July 30-Aug. 3 NC State Prestage Department of Poultry Science (PDPS) celebrated its 10th anniversary Poultry Science Summer Institute (PSSI) program.

PSSI is a five-day, four-night conference and workshop specifically intended to increase the knowledge and expand the horizon of high school student's understanding of all aspects related to poultry science.

21 students attended the 2017 PSSI. The students were able to see campus life at NC State, experience hands-on experiments in a laboratory setting and attend lectures related to poultry anatomy, lab safety, blood collection, artificial insemination and embryology, egg quality, meat processing, as well as DNA fingerprinting of poultry. Students were also given tours of the NC State College of Veterinary Medicine, Feed Mill, the Mount Aire Hatchery and spent an evening at Skyzone Trampoline Park.

NC State PDPS Junior Brittany Wall, a chaperone for PSSI, as well as a student that has been through the PSSI program, said that it's fascinating to see how the program has grown. "It's nice to see kids excited to learn about poultry. I met a lot of faculty through the program, so when I was accepted into PDPS, I knew a lot of my professors – I automatically felt the 'family-like' feel which really made the adjustment easier," she said. "Going through the program helped me see what exactly I wanted to do with a degree and that PDPS was the place for me."



One participant loading a gel while learning about DNA and gel electrophoresis.

PDPS Nutritionist and Professor Kimberly Livingston, coordinator of PSSI, said "Getting involved in PSSI while in high school opens these students minds. They are now introduced to various career opportunities that they have more than likely never thought of such as a geneticists or an embryologist. They're also exposed to the a number different avenues that poultry science has to offer in a matter of a week."

PSSI applications for the 2018 summer will be posted on the PDPS website and must be completed before the March 31 deadline. PDPS would like to thank U.S. Poultry Endowments for sponsoring this event.



Poultry Science Summer Institute participants learning about embryology and the developing chick with the assistance of Ms. Becca Wysocky and Ms. Dannica Wall.

Is there enough land in North Carolina for Range production of Ag Animals?

Kenneth E. Anderson, Ph.D.
Prestage Department of Poultry Science
North Carolina State University

There are people advocating and pushing us in animal agriculture to let agricultural animals have access to the outdoors converting from confinement to free range operations. In order to maintain the same or similar production levels free range operations would place an additional demand on the land utilization. This will impact the environment and the conflicts between urban and rural uses and zoning. The problem is the individuals advocating for more free-range animal production systems have little appreciation for or no concept of the intricacies of agricultural production and how arable land in the United States is 914,527,657 acres classified as farm land. Moreover, they ignore that the bigger threat to production agriculture in the US actually comes from urbanization, which takes 1,000,000 to 1,850,000 acres permanently out of production annually.



Currently there is estimated to be in North Carolina 31,174,963 acres of land. Of this acreage, approximately 5,199,000 acres has been classified as prime agricultural crop land with about 81% harvested, 875,000 acres in permanent grazing land, 18,664,000 acres in forest, and Special Land Usage of 2,395,000 acres which includes roads, agricultural enterprises, and farmsteads. Urban Land Usage in NC is 2,294,000 acres and Other Land Usage of 1,748,000 acres. North Carolina loses approximately 40,000 acres annually to urbanization.

Table 2. Estimated Land for Crops in North Carolina

| | (Acres) |
|------------------------------------|------------------|
| Corn | 940,000 |
| Soybeans | 1,690,000 |
| Alfalfa | 7,000 |
| Winter Wheat | 355,000 |
| Cotton | 255,000 |
| Corn Silage | 40,000 |
| Orchard Crops (Apples and Peaches) | 6,300 |
| Blue Berries | 7,200 |
| Strawberries | 1,200 |
| Mellons | 7,400 |
| Oats | 9,000 |
| Tomatoes | 3,100 |
| Cucumbers | 10,800 |
| Bell Peppers | 2,300 |
| Peanuts | 99,000 |
| Tobacco | 166,000 |
| Beans, Snap | 5,000 |
| Sweet Potatoes | 13,600 |
| Squash | 3,100 |
| Sorghum Grain | 37,000 |
| Sorghum Silage | 4,000 |
| Grapes | 2,300 |
| Cabbage | 2,900 |
| Hay | 687,000 |
| Other | 844,800 |
| Total | 5,199,000 |

Source: USDA NASS, 2016 Crop Acreage

| | (Acres) |
|--------------------------------------|------------|
| Total Agricultural land | 31,174,963 |
| Timber (excludes parks) | 18,664,000 |
| Permanent Grazing land | 875,000 |
| Prime Agricultural Crop Land | 5,199,000 |
| Prime Crop Land in Tillage | 5,199,000 |
| Urban | 2,294,000 |
| Farmsteads, Ag enterprises and Roads | 2,395,000 |
| Balance Available for Expansion | 0 |

Now we need to account for the crop production in NC, which accounts for the greatest use of arable land at 5,199,000 acres (Table 2). The information provided on commercial crops, including vegetable production, is from the 2016 USDA-NASS, Crop Acreage. Even though this is an extensive list, it is by no means all inclusive. This provides a general outlook as to the acreage committed to crop production in NC. Interestingly, of the land that was not accounted for in production, there were no acres accounting for small minor crops indicating that there was virtually no tillable land left out of cultivation. This means that we have reached the upper limit of land availability for cultivation or animal production and increased production must be derived through increased yields (productivity) per acre.

Based upon the suggested pasture/paddock recommendations, the acreage needs for extensive production as advocated by groups in favor of pasture-reared products can be calculated if we were to totally revert to free-range systems. If we do some calculations to determine what the estimated land use is for our current operations these calculations include estimates for land usage from the US Ag Census and all of the Ag Animal Industry Groups. The land usage is the physical footprint of the animal facilities, for housing, feed lots, milking, egg processing, etc, but they do not include dairy processing or slaughter plants. Based on the estimates of facility footprints there is a total of 2,395,000 acres used just for Ag enterprises including animals the animals. Just the animal facilities account for about 653,000 acres.

¹Estimate is

²Estimates are based upon. These estimated areas do not include facilities acreage.

³This calculation does not take into account the range requirement differences between the mid-west and the west rangelands

Is there enough land in North Carolina for Range production of Ag Animals? (Continued)

Based upon the suggested pasture/paddock recommendations, the acreage needs for extensive production as advocated by groups in favor of pasture-reared products can be calculated if we were to totally revert to free-range systems. If we do some calculations to determine what the estimated land use is for our current operations these calculations include estimates for land usage from the US Ag Census and all of the Ag Animal Industry Groups. The land usage is the physical footprint of the animal facilities, for housing, feed lots, milking, egg processing, etc, but they do not include dairy processing or slaughter plants. Based on the estimates of facility footprints there is a total of 2,395,000 acres used just for Ag enterprises including animals the animals. Just the animal facilities account for about 653,000 acres.

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³This calculation does not take into account the range requirement differences between the mid-west and the west rangelands.

Sources:

Vesterby, M. and K. S. Krupa. 1997. Major Uses of Land in the United States, 1997. Resource Economics Division, Economic Research Service, U.S. Department of Agriculture. Statistical Bulletin No. 973. National Turkey Federation, United Egg Producers, Chicken Council National Pork Board, National Cattleman's Association, USDA Ag Statistics

If the Animal Production Sector were to adopt the outdoor access standards recommended for the various domestic species based upon sq ft recommendations for added facilities, the recommended forage areas for grass based ruminant production and outdoor access paddock space for poultry and swine there would not be enough acres in NC to meet those needs. Based on current calculations the North Carolina Agricultural Sector there would be a deficit of 430,543 acres needed to meet outdoor access needs. They would have to decrease the flexible land availability based upon the location of many of the primary animal production systems by 430,543 acres. However, there will be an increased need for housing structures for the animals since stocking densities within the houses are also decreasing. This would take up additional land mass permanently removed from production since many of the current facilities are located within the tillable land area. This movement towards extensive, free-range animal production is not only unsustainable, but it represents an irresponsible use of our limited resources that are needed to feed a hungry and growing world population.



2017 Eastern NC Broiler Production Short Course

Dr. Edgar O. Oviedo
Prestage Department of Poultry Science, North Carolina State University, Raleigh NC



The 2017 Eastern NC Broiler Production was held in Kenansville, NC with the service tech personnel from the main broiler companies located in East North Carolina. This year the program included talks related to Infectious Laringotracheitis control and prevention given by Dr. Jose Linares from CEVA; disposal of mortality with advanced methods of composting presented by Chandler Cummings; impacts of poultry production on river basins discussed by Dr. Deanna Osmond from the Soil Science Department at NC State University, and updates on nutrient management plans explained by Richard Goforth from Cooperative Extension. The keynote speaker Dr. Michael Czarick from University of Georgia gave two talks, one related to poultry housing trends and another related to drinking behavior of chicken flocks. Jeff Adams with Big Dutchman Inc. gave an update on their poultry equipment technologies. Dr. Edgar Oviedo gave a presentation about factors that may influence necrotic enteritis and intestinal health issues, and how to prevent them under antibiotic-free production conditions. Finally Kristian Stewart explained the possible cost-share programs for composting and the application process. During this event two Service Person of the Year Awards were handed out to Jessica Strother from Perdue Farms Lewiston Complex and Jeff Medlin from Nash Johnson/House of Raeford Farms. The awards were presented by Dr. Jesse Grimes, Departmental Extension Leader. Our next Broiler Extension meeting will be conducted again on April 11, 2018 at the new Pittsboro, Chatham Co. Ag and Conference Center.

What's New within PDPS

Hannah Lunsford

NC State Prestage Department of Poultry Science (PDPS) has been restructured to offer a more flexible, structured and organized work environment. The department will now hold three commodity groups: egg, chicken and turkey. Each of these groups is headed by a liaison. Dr. Jim Petite will be in charge of the egg group. Drs. Peter Ferket and Edgar Oviedo for the chicken and Dr. Jesse Grimes for the turkey group. Within these groups are members of the staff that is more directly associated with each of the three commodities. The plan is for the groups to meet and develop ideas and forecasts that could help promote the department as well as enhance the abilities of the department to support the industry and its stakeholders.



PDPS names Dr. Patricia Curtis as Department Head

Hannah Lunsford

NC State Prestage Department of Poultry Science (PDPS) recently named Dr. Patricia Curtis as the new Department Head.

Curtis received her Bachelor's of Science degree in Home Economics Education from Texas Women's University in 1979. She then attended Texas A&M University where she received her Master's of Science Degree in Food Science and Technology in 1982 and her Ph.D. in 1985.

From 1980-1985, Curtis served as a graduate assistant in the Poultry Science Department of Texas A&M University, College Station, TX. From 1985-1989, she served as Assistant Professor in the Animal and Food Science Department at the University of Wisconsin-River Falls with 100 percent appointment. From 1989-1990, she continued to serve as Assistant Professor but only 60 percent appointment, as well as Assistant to the Vice-Chancellor. Between 1991-1995, Curtis accepted the role of Assistant Professor and Extension Specialist within the Department of Food Science at NC State with a focus on poultry and egg processing and product technology. In 1995, Curtis was named Associate Professor and Extension Specialist and remained as such until 1999. In 1999, she became Professor and Extension Specialist until 2002. Curtis left NC State in 2002 and became Professor and Director of Poultry Product Safety and Quality Peak of Excellence Program at the Department of Poultry Science at Auburn University until 2017. Within her time at Auburn University, Curtis served as Interim Director for the National Egg processing Center from 2008-2011. In 2011, Curtis was named Director of the Auburn University Food Systems Institute.

In five years, Curtis hopes that an educational center will be installed at the various agricultural farms located off of Lake Wheeler Road. "I want there to be an area where we can bring in public school students and visitors and let them see how agriculture can exist in an urban setting," she said. "We have got to change the image that agriculture is bad and that will first come by educating the public on where their food has come from. With these commercial buildings, people can come and see how poultry, swine, dairy, etc. units are working." This center will use various technological methods of showing how everything works such as 360 Virtual Reality Cameras, GoPros, interact displays, etc.

"I'm trying to make us come back to an interdisciplinary approach. I want us to be a unique leader for poultry and allied industries and I want NC State PDPS to be their number one source that they'll come back to," Curtis said.

Curtis is currently working on installing a processing curriculum within the department; this would be a joint effort between animal, poultry and food science.

Curtis officially rejoined PDPS as Department Head on April 28, 2017. When asked why she came back to NC State, Curtis said "There are a number of reasons why I came back here. The unique thing about NC State is that it's the only poultry department that has all three commodities: layers, broiler breeders and turkeys. That helps us position what we're doing with our strategic plan of incorporating more interdisciplinary and innovative practices."

As a part of the strategic plan that Curtis is creating, PDPS will join with the College of Agriculture and Life Science (CALS) and the Food Animal Initiative (FAI). FIA brings interdisciplinary sciences together in order to solve challenges within the agricultural industry. It also partners with industry leaders in order to bring ideas to the market quicker.

"If you look at the six poultry science programs across the country, they're all very similar. We all know what it takes to survive. I went through the Food Systems Leadership Institute which was a two-year leadership program created by the American Public Land Grant University (APLU) and NC State was one of the co-sponsors. Within this program, it really got me interested in innovation and interdisciplinary studies in order to meet future needs," Curtis said. "Universities are notoriously slow at making changes and if you look at how much the poultry and poultry-ally industries have changed over the years, educational institutes are way below the industry."

If NC State PDPS wants to remain a global leader in poultry then "we must look to the future and determine what we need to do to meet future needs; in order to do this, PDPS must create partnerships within the industry and with stakeholders, government agencies, etc.," Curtis said. "We're going to have to go way beyond what the university can do by itself. We're going to have to work together and figure out how we can achieve the goals we have for the future. Change is scary, but it's necessary."



Within Curtis's first few months at NC State, she and PDPS faculty have restructured the department into three commodity groups: egg, chicken and turkey. Each of these groups will be headed by a liaison. Dr. Jim Pettitte will be in charge of the egg group. Drs. Peter Ferket and Edgar Oviedo will be in charge of the chicken group and Dr. Jesse Grimes will be in charge of the turkey group. Within these groups are members of the staff that is more directly associated with each of the three commodities. The plan is for the groups to meet and develop ideas and forecasts that could help promote the department as well as enhance the abilities of the department to support the industry and its stakeholders. Stakeholders will meet with each of the commodity groups and critique their actions as well as provide input as to how visions will be met.

By the end of her first year, Curtis plans to have a new mission statement and a strategic plan created that will reflect the new hopes for the department. Also within her first year,

Meet Dr. Ken Anderson

Hannah Lunsford



Dr. Ken Anderson received his Bachelor's of Science degree in Animal Science and Agricultural Mechanization from Southern Illinois University. He then received his Masters in Science degree, as well as his Doctoral Degree from Kansas State University (KSU). At KSU, Anderson was an instructor level faculty member, 50 percent of his work including teaching and the other 50 percent including research.

Anderson came to NC State when a position in the layer research extension program became available. He said that he was "fortunate enough to have been selected."

Currently, Anderson has five research projects going on: layer management, feed, a graduate student project based on layer diets, a peanut mill project, and he is also working with Prestage Department of Poultry Science (PDPS) faculty member Dr. Beckstead, on starter pullets and blackhead.

Anderson's personal philosophy came from the famous poem, The Indispensable Man. "None of us are indispensable. We're all replaceable but we can all have an impact we do our best," he said.

"The egg industry has given me a career, but I want to give back to it because it has given me so much. If I have made an impact on the efficiency and government regulation the industry has to abide by, then I've had a successful career. The long-term impact I hope to achieve is enhancing the well-being of the industry," Anderson continued.

Anderson is responsible for many of the Egg Processing Regulations in Egg Industry rules today, such as cooling, refrigerating, molting, etc. He was the Director of the North Carolina Layer Performance and Management Program

for 10 years and was also on the school board for 26 years. Each year, he trained 60 people in the industry on egg processing and safety. This extension program has been ongoing since 1958.

One of the best pieces of advice that Anderson said he received was from his major professor in graduate school, L. Adams. Adams told Anderson, "If you want people to really listen to you then you need your Ph.D."

Anderson says one of the best things about PDPS is the caring faculty and staff. "Students stay with us because they can see that we care. College students are college students. The willingness to learn and experience in a positive environment will change the students in a favorable way."

Anderson says one of the best things about PDPS is the caring faculty and staff. "Students stay with us because they can see that we care. College students are college students. The willingness to learn and experience in a positive environment will change the students in a favorable way."

"A lot of the PDPS faculty has worked in the industry. We teach from the trenches and not the pulpits. We tell stories -- stories that relate to what we're actually talking and teaching about. This allows students to prepare for what is to come and hopefully, make them better employees of the industry," Anderson said.

He continued, "How I interact with my students is how I've been trained. As we interact, we make it apparent that our goal is to not change the way they think, but to make what they're doing, work better."

Save the Dates!!

Our NCSU Area Poultry Extension Agents will be working together to do programming in all areas of our state this coming winter. Each meeting will contain the same subjects so pick the date and place that is the most convenient for you to attend. Here are the list of dates, places, and tentative subject matter that will be covered at the ongoing meetings. Registration at 9:30 am. Programs will start at 10 am. Sponsored lunch will be made available.

Dates and Places:

Jan. 11- Monroe, NC- Richard Goforth
Feb.7- Kenansville, NC- Margaret Ross
Feb. 28- Carthage, NC- Dan Campeau
Mar. 13- Nashville, NC- Dan Campeau
Mar. 20- Statesville, NC- Lauren Greene

On Topics- Tentatively we have:

Composting
Biosecurity
Nutrient Management updates
Soils – Nutrient uptake research
Ventilation –Cool cell maintenance recommendations for BMP's
Being a good neighbor
Cost Share and Programs available to Poultry Growers

More information to come in early January 2018.

Get to know our newest agents



We would like to introduce you to Lauren Greene, our newest Area Specialized Agent in Poultry. She graduated with a Bachelor's of Science degree in Poultry Science from NCSU in 2012. While in college, Lauren worked for Prestage Farms in their Turkey Growout Division. After graduation, she went on to work for Tyson Foods in Wilkesboro, NC as a broiler service technician. Lauren has experience with turkeys, as well as conventional and antibiotic free broiler flocks. Lauren will cover 30 counties in the western region of North Carolina. Her home office is located at the Wilkes County Center. If you should need to contact Lauren you may reach her at (336) 651-7347 or email, lauren_greene@ncsu.edu

Marissa Herchler is the new Area Specialized Agent for Animal Food Safety, housed in the Prestage Department of Poultry Science. She serves the feed milling industry across the state of North Carolina. Marissa has spent most of her life in North Carolina, growing up in the Salisbury area. She has a B.S. in Zoology with a minor in Wildlife Science and Master of Science in Animal Science with a minor in Nutrition from North Carolina State University. Most recently she finished her graduate certificate in Feed Science and is currently pursuing her PhD in Nutrition. Marissa previously worked in Prestage Department of Poultry Science as a Lab Animal Technician while completing her Master's degree, where she developed an interest in animal nutrition, as well as animal food manufacturing and safety.

With the new food safety regulations, namely the Food Safety Modernization Act of 2011, there are new requirements that can prove to be burdensome on smaller feed milling facilities. Marissa has been tasked with helping to ease that burden on stakeholders across the state. In order to provide assistance, Marissa and her supervisor, Dr. Adam Fahrenholz, hold 2.5-day Preventive Controls Qualified Individual training courses at the university. It is the only FDA-recognized training to fulfill the PCQI requirements, though individuals may also be qualified through education, job experience, or other training. These training courses are held on an as-needed basis, so anyone interested should contact Marissa.



Should anyone have any questions about how FSMA affects animal food manufacturers or compliance with the regulations, please contact Marissa Herchler; mpherchl@ncsu.edu; (919) 515-5396, or visit the extension website (ncfsma.ces.ncsu.edu) for more information.

In addition to PCQI training, the feed milling program is also working to develop an online Qualified Individual training course. By law, facilities must provide food safety and hygiene training to all employees whose jobs or actions may affect food safety. The law does not specify any particular training; thus facilities are charged with either creating their own or outsourcing to find one that meets their needs. This is a service the NC State feed milling program is hoping to provide to stakeholders. As part of this program, they are also working to provide CGMP (Current Good Manufacturing Practices) guidance.

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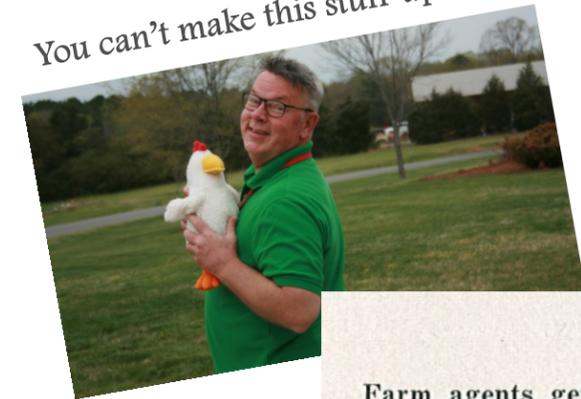


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Need a good laugh?

You can't make this stuff up!



This news clip was published in a state poultry magazine during the 1950's.

Farm agents get quite a few unusual requests for information, but here is one of the most unusual Glenn Tussey, assistant in Rowan has yet received: "If you feed chickens rat poison and it doesn't kill the chickens, will the eggs laid by the chickens be poisonous?" was the lady's question. A question to the lady as to why she desired this information brought the following answer: "Well, my neighbor won't keep his chickens out of my flowers, so I fed them two whole boxes of rat poison, but it didn't kill them. And the reason I'm asking about the eggs is that I buy them from my neighbor."

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