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Mitchell Pate, director of Auburn University's Poultry Research Unit, looks on as the finishing touches are being made to the Poultry & Animal Nutrition Center's modular feed mill.

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PHOTO BY JACKIE ROEMBKE

Auburn's New Feed Mill Comes to Roost

Fueled by donor support, state-of-the-art research feed mill opens for 2012/13 school year

By Jackie Roembke

Auburn University's College of Agriculture has hatched an exciting new addition to its poultry science department. Just in time for the fall semester, the long anticipated Poultry & Animal Nutrition Center has opened its doors to students and the poultry industry alike. Located in the center of the "Broiler Belt," Auburn is one of six poultry science programs in the United States; and with its new mill, it is poised to fill the gap in feed and animal nutrition research, training and education in the Southeast.

In January 2008, the seed for the creation of the feed mill was planted at the International Poultry Expo/International Feed Expo (IPE/IFE). Like so many attendees, Auburn University staffers were walking the show, viewing the best the feed and poultry industries had to offer by way of innovation and equipment. Mitchell Pate, director of

Auburn University's Poultry Research Unit, happened upon T. E. Ibberson Company's booth and a video of what at the time was California Polytechnic State University's (Cal Poly) new academic feed mill. Impressed, he brought Dr. Don Conner, department head and professor, Auburn Poultry Science, over to learn more about the Cal Poly project.

"We needed a new mill in order to expand our research capabilities — but what really struck me was the Cal Poly photo of all the students posing on the modular units of its feed mill," Conner says. "[The design] is ideal for student learning."

Meanwhile, back at Auburn, the university had been eyeing the prime campus real estate being occupied by the aging poultry barns and feed mill. Pate, who graduated from Auburn's Poultry Science program in 1984, returned to the university to head up Auburn's Poultry Research and Extension Center in 2006. One of his primary responsibilities with the university was to spearhead the management of the university's relocation of its poultry farm to the North Auburn Campus in three phases: first, the feed mill; second, the broiler houses; and, third, the processing plant.

Mitchell Pate, the director of the Poultry Research Unit (left), Dr. Don Conner, Auburn's poultry department head, and T. E. Ibberson Company's Gerry Leukam, stand in front of Auburn University's new modular feed mill.

PHOTO BY JACKIE ROEMBKE

"One of my passions is feed milling so I really pushed to get the ball rolling on the new mill," Pate says. "I feel like students in the Southeast don't get enough training in the feed milling area."

As word of Auburn's intentions got out, the supplier community and industry stakeholders, many who would eventually become key donors, strongly encouraged the team to bring a Cal Poly-esque modular mill to Auburn.

With the support of the university and private industry, construction on the new mill began in June 2011. T. E. Ibberson provided the mill's design engineering and construction, which includes nearly 100 tons of storage; J&L Contractors erected the 12,000-square-foot building.

The \$7 million research mill is funded 100% by soft money from the poultry industry and associated industries; no federal or state government money was used. The feed industry's suppliers donated over \$750,000 worth of equipment.

Creation of an academic mill

While the original mill served its purpose churning out generations of Auburn poultry science students since 1976, it bears no comparison to the new mill.

"It's like comparing a caveman's stone wheel against a Mercedes C-Class," Pate explains. "The new mill is a different ball game."

Conner adds: "The suppliers of the basic equipment are still in business — and the tried-and-true technology is there — but the old mill had its limitations. To achieve the level of precision and accuracy for modern poultry and animal nutrition research, we really had



to build in more capacity and capability.”

During the early planning phases, the Auburn team developed a technical advisory committee (TAC) comprised of industry leaders and staff to steer the layout of the mill toward an optimal design, including the state-of-the-art technologies and equipment students will encounter in a modern commercial mill.

Similar to the Cal Poly mill, the committee decided the modular design was the way to go because it offers the right sized process flow for an academic and research extension feed mill.

“The committee insisted we downsize the mill to produce batches as small as 250 pounds because a student operating at a small scale can easily adjust the equipment or formulation to see what happens as a result of the adjustment,” explains Gerry Leukam, senior vice president - business development, T. E. Ibberson. “It was important for the mill to be able to make continuous production runs to feed the livestock on campus and have the ability to slow down to make very precise formulated diets for doing cutting-edge research.”

The mill is equipped with the ability to pregrind, post-grind and hybrid grind ingredients. The nominal capacity of the research feed mill is 5 to 10 tons/hour with a pelleting capacity of 2 to 5 tons/hour.

Every piece of equipment in the mill is scalable by a factor of 10, 12, 15 — with the same pinch points, same rolls, same die thickness — so the tests can easily be translated into real-life scenarios in a larger facility.

“The feed mill runs the same as a full-sized commercial mill just on an itty-bitty scale,” Pate explains. “Nothing has changed. We just have mini versions of the equipment found in a traditional mill.”

Learning from experience

The goal of the new mill is giving the students hands-on experience so they graduate with the ability to connect the dots between production, problem solving and economics to become the future business leaders of the poultry industry.

With oversight from Auburn profes-



Dr. Don Conner and students pose on the modular feed mill inside Auburn University's new Poultry and Animal Nutrition Center, a 12,000-square-foot facility located at the university's North Campus.

PHOTO BY MITCHELL PATE

turning equipment on and off, filling the scale hoppers, filling the micro scales, turning on pellet mills, adjusting steam pressures — actually manufacturing feed — so upon graduation they will have a keen understanding of how a real plant operates.

“The equipment utilizes Plexiglas wherever appropriate so the students can actually see the inside of the machine to see what it’s doing,” Pate says. “This is a computer-based, automated system so they can observe it on the screen and then be able to walk out and touch it.”

Through lab experiments and assignments, Conner hopes students will learn to make cause-and-effect connections between, for example, the feed conversion rates produced by high-quality vs. low-quality pellets: “If a student can feed birds side-by-side with pellets of different formulas and

see the performance differences in the birds, suddenly, the light bulb goes off. You can try to explain something, but when they see it with their own eyes and weigh the chicken, then they really understand.”

“Roughly 60% to 70% of the cost in producing a broiler comes from feed milling; so if we can reduce that cost for broiler companies, we’ll be able to save them lots of money,” Pate adds.

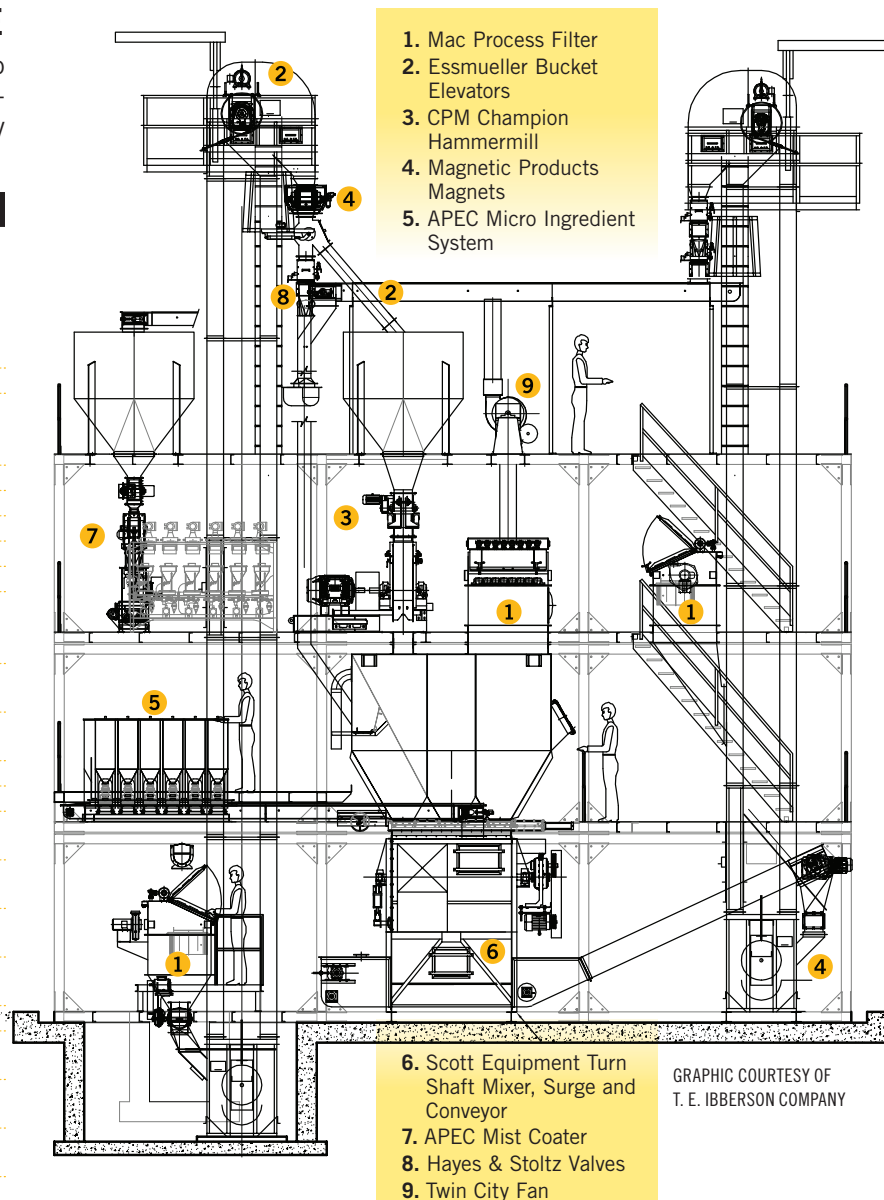
Sixty graduate and undergraduate students will be using the mill this year. Pate employs 10 to 15 of these students to work at the mill and on the research farm. The program will have some labor at the mill producing feed for the university’s animal population, but most feed will be made in class.

“We’re hoping to be able to pull from the other animal science departments within the university to create a feed

INVESTING IN THE FUTURE

Feed industry suppliers stepped up to donate over **\$750,000** worth of equipment to the Auburn University Poultry & Animal Nutrition Center.

Donor	Equipment
APEC - Automated Process Equipment Corporation	Micro Ingredient System, Rotary Feeder, Flow Meter, Coater, Liquid Skid, Liquid Skid, Enzyme Cabinet, Enzyme System, Enzyme System, Enzyme System
Bindicator	Indicators
California Pellet Mill	Feeder, Conditioner, Hygieniser, Pellet mill, Cooler
Cleaver-Brooks	Boiler Pumps, Softener
CPM Champion	Hammer mill
CPM Roskamp	Crumbler
Eastern Instruments	Impact Scale
Electro Sensors	Sensors
Endress + Houser	Liquid meters and liquid level indicators as part of the APEC equipment
Eriez Magnetics	Vibratory feeders as part of the APEC equipment
The Essmuller Company	Conveyors, Bucket Elevators
Gardner Denver	Central Vacuum System
Interstates Controls	Controls
JEM International & Express Scale Parts	Bagger, Conveyor, Sewing Pedestal
Mac Process, LLC	Filters/Fans, Dust Collection Systems
Magnetic Products, Inc	Magnets
Rice Lake Weighing Systems	Batching Scale Load Cells
Rotex, LLC	Screener
Scott Equipment Company	Mixer, Surge and Conveyor
Screw Conveyors Corporation	Batching Feeders
Seedboro Equipment Company	Testing Equipment
Union Special	Sewing head



milling program everyone will be able to use,” Pate explains. Initially, the mill will solely produce poultry feed; however, it has the ability to manufacture additional varieties of feed.

Meeting leadership demands

Auburn’s poultry science department focuses on providing quality educations designed to meet the needs of all facets of the poultry industry.

“The demand for managers, the succession of leadership and a lack of people in the pipeline to take on decision-making roles will become a major issue in coming years,” Conner explains. “It’s our goal to put out students who are well trained in

soft skills as much as technical skills. I’m not recruiting students to take management positions; I want to put out CEOs and VPs — that’s what we’re training and growing here.”

Conversely, from a continuing education standpoint, Conner feels the new mill presents the opportunity to develop promising middle management by honing their understanding of feed milling and new technology.

Auburn also welcomes private industry to conduct proprietary research at the new facility.

“Auburn Agriculture’s bread and butter is serving the poultry industry, but we’re not in it to profit,” Conner says,

noting the department does have to cover its costs and reinvest in the program.

“It’s our mission to do research and training that is transferrable directly into industry practice,” Conner explains. “[The mill] was built from donated funds, and the industry has faith that we will deliver on our promises. I think it’s going to be a busy place, but we’re up for the challenge.”

To date, the school has reached 40% of its funding goal. Conner invites anyone who is interested in the mill to come out and take a tour; he also wanted to stress this final message: “We’re still fund raising!” ■

For more information about Auburn University’s Poultry & Animal Nutrition Center, visit www.ag.auburn.edu.