

NC State and Repete: Advancing Feed Mill Education and Research



• A Valued Partnership

NC State Feed Mill Education

Unit Overview

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The NC State Feed Mill Education Unit was established to support the university's mission of education, research, and outreach in the field of feed manufacturing. Operational since 2008, the facility plays a pivotal role in training students, supporting research, and offering hands-on experience with modern feed mill operations. Dr. Adam Fahrenholz, an expert in feed manufacturing at NC State, shared how the unit collaborates with Repete Corporation to enhance its operations.

What Sets NC State Apart

The NC State Feed Mill Education Unit exists to serve the three domain missions of the university: teaching, research, and outreach. Dr. Fahrenholz noted that only a few universities operate similar mills. NC State's location in a region focused on integrated feed production for poultry and swine, as well as on commercial production for other species, uniquely positions its program to meet the specific needs of the food animal industry.

"Many of our students are headed towards careers in the integrated food animal world," said Dr. Fahrenholz. "So we tend to focus on that segment of feed production, while also teaching about commercial operations."

Educating the Next Generation

The Feed Mill Education Unit is a cornerstone of NC State's efforts to educate students in feed manufacturing. Through tours, coursework, and hands-on labs, students gain a comprehensive understanding of feed mill operations. The unit serves students from diverse fields such as animal science, poultry science, and even engineering, giving them real-world experience with cutting-edge automation systems.

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"We use the mill for hands-on labs and to teach students how feed is made. We show how systems like Repete's automation interact with the equipment and data," Dr. Fahrenholz explained. "It's a critical part of our feed milling minor and certificate programs."

This hands-on learning experience prepares students for leadership roles in the industry, where they can manage operations or oversee production staff in feed mills or related facilities. The ability to train on modern automation systems equips students with a deeper understanding of how automation systems can drive efficiency and quality in feed production.



NC STATE Feed Mill Education Unit

"Working with Repete's advanced automation system gives students interactions that are valuable when they enter real world operations. Students are generally more confident when they've had the opportunity to work with industry level technology," said Dr. Fahrenholz. Many students go on to work in integrated food systems where their feed mill experiences are useful in learning how to manage operations efficiently.



Supporting Cutting-Edge Research

In addition to teaching students, the Feed Mill Education Unit plays a vital role in supporting live animal research by producing precise and consistent research diets. These diets are critical for poultry, swine, and ruminant studies, where feed may serve as either a controlled factor or the primary experimental variable.

"For many studies, feed must remain a constant, controlled factor. In other cases, we're testing new ingredients or feed forms, and the accuracy provided by the Repete automation system is essential," said Dr. Fahrenholz.

Repete's automation system ensures that batch records are accurate, enabling researchers to trust the data and focus on animal responses rather than potential inconsistencies in feed production. The ability to track and review these records is key when working with different diets or additives. The Repete system features SMX hand-add management, ensuring a verified chain of custody from the bag to the scale to the mixer. The system guarantees that the correct ingredients are included in the right batch at the proper inclusion levels.

"We're making a lot of different research diets, and it's incredibly important that the right ingredients go into the right batch," Dr. Fahrenholz explained. "If we mess that up, we mess up an entire research trial. Having that extra level of control, just like in a production mill, is really beneficial—especially on the research side."

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With the detailed batch records provided by the automation system, researchers can confidently verify that the correct ingredients were used in each batch. This is critical for ensuring reliable research outcomes and maintaining the integrity of the studies.

"The ability to go back and review batch records is incredibly valuable. If we see differences in research outcomes, we can verify that the feed production process wasn't the cause," Dr. Fahrenholz added.

NC State and Repete: An Ongoing Partnership

Repete has been an essential partner for the Feed Mill Education Unit since its inception. The system was originally installed when the mill was built and has been upgraded over time. These upgrades have allowed the feed mill to stay current with industry standards while continuing to support both educational and research missions.

"Repete helped us upgrade our system, and they've always been quick to provide support when needed, treating us just like a larger commercial mill," Dr. Fahrenholz noted.

This relationship has ensured that the mill runs smoothly, allowing faculty, students, and researchers to rely on the system for their day-to-day operations without disruptions.



"We know we can count on Repete for support, whether it's for the system or something mechanical or any other challenge," said Dr. Fahrenholz.

Looking Ahead to the Future

The team at the NC State Feed Mill Education Unit is focused on the future. Dr. Fahrenholz explained that maintaining cutting-edge technology is essential to keeping the mill relevant for both research and education.

"We're thinking about the next steps—what the feed mill will look like over the next 20 years and what improvements we need to make," said Dr. Fahrenholz.

Upgrading infrastructure and equipment is a key priority for NC State. While maintaining and operating an academic and research feed mill doesn't always require the latest state-of-the-art technology, maintaining state-of-the-industry systems is essential for providing students with the skills they need in the workforce.

"We want our students to leave prepared for the real world. That means giving them experience with the technology they'll encounter in the industry," Dr. Fahrenholz added.

The NC State Feed Mill Education Unit stands as a model for how academic institutions can collaborate with industry leaders like Repete to provide both cutting-edge research support and hands-on education. By integrating modern automation systems into the curriculum, the mill is preparing the next generation of feed manufacturing professionals while contributing to vital animal nutrition research. Together, NC State and Repete are driving the future of feed milling education.

NC State Success Story

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