 message from the program manager

At the beginning of FY 2020, few could have predicted how this year would change so many aspects of our personal and professional lives. For the Agricultural Technology Research Program (ATRP), we began the year full of optimism and exploration. As a result of the coronavirus pandemic, ATRP had to pivot and learn to adapt to new work environments, communication tools, restricted in-person interactions, and industrial collaborations. However, in early 2020, the global landscape shifted amid the coronavirus pandemic, which created a sense of accomplishment in sustaining technology developments in the commercial sector through in-person and virtual industry partnerships. Despite the coronavirus, we are working collectively to advance our research projects and are excited to continue our work in the years to come.

Notably, a strong tie in support of ATRP’s vision was the announcement of the Abit Massey Industry Collaborative Research and Development Foundation that allowed us to turn Flexi-FFx. This program supports university students and faculty to develop new products, technologies, and services for the poultry industry. The Massey Foundation’s generous support will enable ATRP to cultivate new ideas and work together with our industry partners to support the next generation of researchers.

In addition, several research teams started the process of transitioning prototypes into full-scale concepts and exploratory research projects. The ATRP NEWSLETTER provides updates on the full-scale projects, and annual funding provided by the state of Georgia.

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AUTOMATED CONVEYORS LOADING WITH LOW-COST AUTOMATION TECHNOLOGY

Researchers continued to develop a low-cost, fully automated and robotic conveyance system that could replace labor-intensive, high-volume manual handling tasks such as loading and unloading chicken carcasses in poultry processing. A robotic arm was used to load and unload the birds, and an automated conveyor was used to transport the birds to different processing stations. The system was designed to reduce labor costs and improve efficiency in the poultry processing industry.

HEAT STRESS CHALLENGES: SALT INTERACTIONS AND POTENTIAL THERAPIES

Researchers continued to investigate the role of salt in reducing heat stress in poultry. They found that salt can help reduce heat stress by increasing sweat production and cooling the body. Additionally, they investigated the potential of salt as a therapy for poultry to help reduce heat stress and improve performance. The study showed that salt could be an effective treatment for poultry to help reduce heat stress and improve performance.

STRESS REDUCTION THROUGH VIRTUAL REALITY-BASED OPTIMIZATION OF COLLECTOR NETWORKS

Researchers continued to explore the use of virtual reality (VR) technology to optimize poultry collector networks. They developed a VR-based system to simulate collector network performance and optimize network design. The system was found to be effective in reducing stress in poultry and improving collector network performance.

EXPLORATORY RESEARCH PROJECTS

HIgher RISK, LOWER SLOPE EXPERIMENTAL STEPS THAT SEEK TO DEVELOP CONCEPTS AND IDEAS FOR LATER TRANSFER INTO FULL-SCALE PROJECTS

Researchers continued to develop an automated robotic system for collecting and processing poultry waste. The system was designed to reduce labor costs and improve efficiency in poultry processing. The researchers also investigated the potential of using waste products as a feedstock for biorefineries.

POULTRY SKINNING PROCESS

Researchers investigated the effects of different skinning processes on meat quality and processing efficiency. They found that optimized skinning processes can improve meat quality and reduce processing time.

ANIMAL-BASED PRODUCTION SYSTEMS: IDENTIFYING AND REMOVING MORTALITY

Researchers continued to develop and optimize an automated system for identifying and removing mortality in poultry processing. The system was found to be effective in reducing mortality and improving processing efficiency.

MAGNETIC NANOPARTICLES FOR POULTRY PROCESSING LIQUID STREAMS

Researchers investigated the potential of using magnetic nanoparticles for recovering phosphorus from poultry processing liquid streams. They found that the nanoparticles showed promise for improving phosphorus recovery and reducing environmental impact.

FULL-Scale RESEARCH PROJECTS

ADDRESSING CRITICAL ISSUES FACING INDUSTRY PRODUCTION AND PROCESSING

Researchers conducted a series of field tests in an actual growout house to evaluate the performance of an automated system for identifying and removing mortality. The system was found to be effective in reducing mortality and improving processing efficiency.

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