

2-2018

Animal Science E-Newsletter, February 2018

University of Arkansas, Fayetteville. Department of Animal Sciences

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Citation

University of Arkansas, Fayetteville. Department of Animal Sciences. (2018). Animal Science E-Newsletter, February 2018. *Animal Science e-Newsletter*. Retrieved from <https://scholarworks.uark.edu/ansc-enews/48>

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Research Highlight: *Animal Health*

Efficacy of a novel intranasal zinc solution on health and growth performance of high risk, newly received stocker cattle

Makenzie Foster, Beth Kegley, Jeremy Powell, Paul Beck, Jana Reynolds, Pete Hornsby, Doug Galloway, Jase Ball, and Jiangchao Zhao

Bovine respiratory disease (BRD) is a major problem in every facet of the cattle industry due to decreasing economic output, production and increases in medical costs, labor and death loss.

Newly received calves are at a high risk for contracting BRD due to increased levels of stress which can negatively affect the calves' immune system rendering them susceptible to bacterial and viral pathogens. In its upper respiratory form, BRD is similar to the

common cold in humans displaying similar symptoms.

Zinc, an essential dietary mineral, has been shown to act as a competitive inhibitor and can disrupt replication of the virus. Pharmaceutical companies have used an intranasal zinc spray in humans to help decrease the severity and duration of the common cold.

Applying Zn solutions via mucosal application, in addition to antibiotic treatment for BRD, could have a positive effect on the calf's immune response and growth performance; therefore the objective of this study was to evaluate whether a mucosal application of Zn would impact health and growth

performance in high-risk, newly received stocker calves.

- Intranasal zinc did not appear to have a positive effect on average daily gain and did not decrease morbidity and mortality in calves susceptible to bovine respiratory disease.

- Treating all calves appears to have a negative effect on performance; however selectively treating calves with bovine respiratory disease could be more efficacious.

- Anosmia derived from the treatment of zinc may have had an effect on feed intake. }

Students Present Research at Paul Noland Graduate Student Awards Competition

On January 24th, seven Department of Animal Science masters and doctoral candidates presented their research at the 2018 Paul Noland Graduate Student Awards Competition at the the John W. Tyson Center of Excellence for Poultry Science.

Paul R. Noland, who passed in 2015 at age 91, was an emeritus professor of animal science at the University of Arkansas.

Noland served as head of the Department of Animal Science from 1988 until his retirement in 1994, during which time he participated in the establishment of the department's poultry science program into a separate academic department. He joined the faculty in 1951 after receiving his doctoral degree from Cornell University.

In addition to conducting research in swine nutrition and management, sheep management, and beef cattle nutrition, Noland taught courses including the freshman animal science class, lab methods, swine production, and advanced livestock production.

Moreover, Noland developed Panama's first animal research program, which served as a foundation for a 60 year collaboration between Panama, the University of Arkansas System Division of Agriculture, and the Dale Bumpers College of Agricultural, Food and Life Sciences.

Noland's work was recognized by Panama



Jase Ball presents his research.

in 2009 when President Ricardo Martinelli, a U of A alumnus, presented him the Vasco Nunez de Balboa Award, the nation's highest civilian honor. Martinelli credited the program Noland developed with stimulating Panama's agricultural growth and enhancing academic ties with the university.

The Paul Noland Graduate Student Awards Competition was established to honor Noland's impactful work in animal science and the community.

The competition judges students in three areas: abstract, oral presentation, and curriculum vitae. One M.S. student and one Ph.D. student is awarded a \$750 travel stipend for regional and national research conventions. The winners are also selected as the Outstanding Animal Science M.S. and Ph.D. students at the annual Animal Science Awards and Scholarship Banquet.

This year, out of the seven students who all presented incredible research, Elizabeth Palmer, whose research is titled "Effect of a combination of live yeast and yeast cell wall products supplemented before and after weaning on heifer growth performance and heat stress" was selected as the winning M.S. candidate, and Jase Ball, whose research is titled "Zinc injection as a novel castration method in beef bulls" was selected as the winning Ph.D. candidate. }



Elizabeth Palmer presents her research.

Student Places at 3-Minute Thesis Competition

New this year in Ft. Worth, American Society of Animal Science Southern Section student competitions took the form of a "3-minute thesis". Presentations were limited to three minutes with one static (no animation) PowerPoint slide.

During the allotted time, the student had to convey the significance, methodology, results and implications of the study. Students were also evaluated on the flow of the presentation, their effectiveness to engage the audience, and their ability to communicate their research to a general audience.

In the undergraduate student competition, Zena Hicks, working with Dr. Jason Apple in the Department of Animal Science, placed third with her research, titled "Lean Percentage, Storage Times, and Griddle Temperature Affect Raw and Cooked Visual and Instrumental Color and Cooking Loss in Fresh Ground Beef Patties."

In addition to presenting in the 3-minute thesis competition, Zena presented her research in a more technical 12 minute format in the Meats Section of the meeting.

Hick's research project was funded by the Arkansas Beef Council.

(Source: American Society of Animal Science, Taking Stock, February 6th 2018) }



Dr. Janeal Yancey presents the 3-minute thesis award to Zena Hicks in Fort Worth.