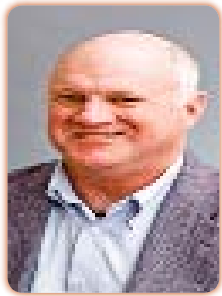


# Global Veterinary Summit

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### Risk of exposure of grazing animals to toxic alkaloids produced by fungal endophytes

There are *Epichloe* and *Balansia* species of fungal endophytes that can infect various forage grasses and grow in the intracellular spaces of the grasses. Endophytes seasonally produce large concentrations of ergopeptine alkaloids, which cause a toxicosis in grazing livestock. Certain endophytes also produce indole diterpenoids that cause the staggers condition in livestock. Ergovaline is typically the ergopeptine in highest concentration and also is the most toxic. *Claviceps* fungi can infect inflorescence of cereal grains and certain forage grass species, and produce ergopeptines, most notably ergotamine, that cause the toxicosis, but certain species can also produce tremorgen compounds (*Claviceps paspali*). Signs of the toxicosis include reduced conception rates, retention of rough hair coats, depressed prolactin concentrations, elevated core body temperatures, and reduced DM intakes and weight gains. Signs of consumption of tremorgen compounds are excitability, persistent shaking, and incoordination. Animals are sensitive to these toxic alkaloids, with morbidities often above 80%; however, mortality is typically below 5 percent. The cost in animal production can be quite high, but management approaches can be taken to mitigate the adverse effects on animal physiology and well-being. There will be a discussion on the altered physiology of grazing animals inflicted with either the toxicosis or staggers and management approaches to mitigate or alleviate the toxicosis.

### Biography

Glen E Aiken completed his PhD in Agronomy from the University of Orlando-FL in 1989. He completed postdoctoral studies at Auburn University and Texas A&M University, and has worked as a Research Animal Scientist/Agronomist for USDA-ARS since 1992. He has served as the Research Leader for the Forage Animal Production Unit in Lexington, KY since 2013. He is a Fellow in the American Society of Agronomy and the Crop Science Society of America and has 94 papers in reputable journals and 111 book chapters, popular press articles, and book chapters.

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