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Assessing internal parasite loads of sheep and goats in Animal Science courses

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The curriculums featured in School of Agricultural Sciences and Forestry often offer a multitude of hands-on experiences in the field to stimulate and support classroom lectures. More specifically, the Animal Science curriculum features several courses which teach topics on beef, sheep and goat production, all of which feature aspects of research and production opportunities on Tech Farm. A major concern of livestock production, particularly in sheep, goat and beef production, is the control of internal parasites. While this is a concern throughout the life of these animals, it is of particular concern in young animals prior to and immediately following weaning. Moreover, current research shows that internal parasites are developing a resistance to many of the commercial anthelmintics, resorting in the research of new management methods and products for control of internal parasites in all species. Both livestock producers and veterinarians utilize several techniques to determine parasite loads and anemia (a result of high parasite loads), including FAMACHA scores (sheep and goat production), hematocrit levels or packed cell volume, and fecal egg counts with McMaster slides and protocol. Teaching these procedures enhances the students' experiential learning by allowing them to apply knowledge of animal health and handling to both veterinary medicine and livestock management strategies. Although it fits into many courses, the first course to assess this laboratory project was ANSC 224, Introduction to Livestock Management. Students were introduced to research from peer-reviewed manuscripts and learned protocols for assessing FAMACHA scores, hematocrit levels or packed cell volume, and fecal egg counts with McMaster slides. They divided into groups and performed these procedures on mature ewes and growing sheep currently housed on Tech Farm. Students then discussed the results they collected and suggested management protocols for treatment and prevention of internal parasites in sheep and goats on Tech Farm. The project was also assessed by asking students to complete a survey on their learning experience. Survey questions, answered on a scale of 1-10, included: 1) How much did this project enhance your learning experience? Average response: 9.5; 2) how much do think this project will enhance your chosen profession in the future? Average response: 9.5; and 3) How well do you feel this project will enhance your current or future livestock management practices? Average response: 9. Positive comments included: "Makes me more excited about my chosen profession (vet)."; "Allowed hands-on learning, making the information easier to apply to real-life circumstances.", "It will definitely help a lot. The only way to improve medicine and disease prevention is to improve medical equipment and technology.", and "I already feel like I know so much more in the first few hours of this lab than I did in past science courses. It definitely pushed me out of my comfort zone. I felt challenged to overcome long time fears." Based on a largely positive response from the students, this will continue to be incorporated in future Animal Science courses, spanning to include goats and cattle.