

**Preventing the Bite: Tick Talk Professional Development Event for Agriculture Educators**

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### **Need for Idea**

In the United States, ticks are connected to causing ninety-five percent of vector-borne diseases reported on an annual basis (Sonenshine, 2018). An increasing amount of research is signifying a growth in the prevalence of ticks and vector-borne diseases due to changes in the climate (Dumic & Sevemini, 2018). Among the worrisome health issues is Alpha-gal syndrome (AGS). AGS alone is estimated to have impacted as many as 450,000 people in the United States (CDC, 2025). In Kentucky, another major tick-borne illness, Lyme disease, increased over 300% from 2010 to 2019 (Pasternak & Palli, 2022). While there are educational resources available for K-5 students, there is a lack of resources for the secondary agriculture classroom. The increasing number of individuals in Kentucky impacted by vector-borne diseases like AGS from ticks and the lack of secondary educational resources creates a call to action to provide agricultural educators with instructional resources to create awareness in their communities as a form of prevention. To overcome this gap, a professional development event called “Tick Talk” was created to develop and distribute tick information and instructional resources to agricultural educators in Kentucky. This effort aims to prevent further tick-borne diseases through education in the secondary classroom to create awareness across the state.

### **How it works**

The Tick Talk professional development event places significant value on providing educational resources for teachers, which reflects the AAAE research value of advancing public knowledge of AFNR systems (AAAE, 2023). A partnership was created between the University of Kentucky agriculture education and advocacy department (AEA), University of Kentucky Extension Service, Sawyer, and the Kentucky State Entomologist. The team of educational and tick specialists used their content knowledge to produce a professional development (PD) event concentrating on educating secondary agricultural educators about ticks. Prior to the 2025 Kentucky Summer Teacher’s Conference, learning objectives and impactful content knowledge were established to guide experiential learning activities and specialized classroom materials. As the facilitation team composed resources, educators were responsible for registering for the PD through the summer conference. To increase participation, virtual flyers were created and distributed by social media on the AEA department’s Facebook page and physical copies were handed out at the state FFA convention for easy registration.

Between each entity, resources and content knowledge were exchanged to produce classroom materials that agricultural educators could utilize. Each resource and activity was cross-referenced with each department to ensure accuracy and practical classroom application. An array of resources was given to teachers if they attended the Tick Talk PD. Such as an “I spy” tick poster, which visually represented the size of a tick compared to daily items. Multi-day lesson plans, matching games, scenario cards, PowerPoints, worksheets, and experiential learning activity instructions were distributed to teachers. During the professional development

event, individuals from the AEA department spent time with Kentucky agricultural educators demonstrating how to utilize this curriculum, facilitated activities, and distributed resources. Facilitators utilized white 3-D printed ticks, which allowed educators to alter the appearance of the ticks using sharpies to represent a specific species. Teachers were also given resources and articles published through the University of Kentucky Extension and Entomology office.

### **Results and implications**

The implementation of the Tick Talk professional development event at the 2025 Kentucky Summer Teacher's Conference fostered opportunities for agriculture educators to expand their knowledge and practical skills related to tick awareness and prevention. The event aimed to provide participants with the expertise and resources necessary to increase tick-borne disease awareness in their local communities. This event provided 47 agriculture educators with valuable tick information and resources prepared for the secondary classroom. Participants were provided with over 24 online resources including posters, literature, and lesson plans. Physical resources included plush ticks, 3D tick models, and tick safety equipment.

### **Future Plans**

The Tick Talk professional development event aims to provide secondary agriculture teachers with the resources needed to increase awareness of ticks and tick-borne diseases in the communities they serve. These materials should be utilized in middle to high school agricultural classrooms to teach youth the importance of protecting themselves from tick-borne diseases. Beyond the tick-related resources for teachers, a continuation of the project has been added, targeting both the agricultural educator and outdoor enthusiast. The PD team will be collaborating with an outdoor podcast, which will be disseminated to a wider audience and can still be utilized in an educational setting. To continue advancing online resources, the PD team has utilized feedback from participants to create additional resources to enhance instruction opportunities. A predominant request from participants was for further resources on tick identification. The PD team plans to create high-quality instructional resources based upon these requests to elevate the resources available.

### **Cost/ Resources needed**

The cost to host this event was minimal due to partnerships created with other organizations. All literature was free due to public publications through the Extension office. All activities, lesson plans, and game materials were created using Canva or Word. On the other hand, University resources provided the opportunity to print 3-D ticks, which would be distributed to educators. Also, teachers took home a piece of hide and pins, which replicated ticks hiding on cattle. The hide pieces were donated by Kentucky Leather and Hides, and over 600 pins were purchased for six dollars. Sawyer also donated stuffed ticks and topical tick repellent materials to be distributed to educators. Overall, it was an inexpensive cost to host the PD event. Teachers had to pay the attendance cost of the conference to attend the Tick Talk breakout session.

## Resources

- American Association for Agricultural Education (AAAE). (2023). AAAE Research Values.
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- Pasternak, A. R., Palli, S. R. (2022). Mapping distributions of the Lyme disease vector, *Ixodes scapularis*, and spirochete, *Borrelia burgdorferi*, in Kentucky using passive and active surveillance. *Ticks and Tick-borne Diseases*, 13(2),1-24.  
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