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Tick Collection and Identification Methods

The purpose of our project was to develop a locally valid method for tick sampling, and identification by using microscopic photographs. The pilot study started in August 2017 and continued through March 2018. The pilot study was structured around six goals including tick identification methods, tick biology, tick identification, sampling/ preservation techniques and tick collection methods suitable for West Virginia. The initial sampling method proposed was via drag sampling, as it is the standard method for obtaining ticks of all three life stages. Drag methods proved ineffective in the Fall of 2017, a factor we attribute to the uncommonly low rainfall level. Research indicates tick activity peaks during conditions of increased precipitation, which we did not experience. Instead of drag methods, we switched to another common approach which involves extraction of ticks from white- tailed deer carcasses. Ticks burrowed in deer carcasses were extracted using forceps to prevent contamination and/or damage. Ticks were obtained from 16 sites across four separate counties. Each of these counties has a recorded instance of Lyme disease. The majority of the samples collected were blacklegged (*Ixodes scapularis*) and brown dog (*Rhipicephalus sanguineus*) ticks. Our sample of ticks were then photographed under a microscope and then categorized in a spreadsheet.