Seasonal Activity and Abundance of the Blacklegged Tick (Ixodes Scapularis) in Mid-Western Pennsylvania

Michelle Myers-Claypole

Indiana University of Pennsylvania

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SEASONAL ACTIVITY AND ABUNDANCE OF THE BLACKLEGGED TICK (IXODES SCAPULARIS) IN MID-WESTERN PENNSYLVANIA

A Thesis
Submitted to the School of Graduate Studies and Research
in Partial Fulfillment of the
Requirements for the Degree
Master of Science

Michelle Myers-Claypole
Indiana University of Pennsylvania
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Indiana University of Pennsylvania
School of Graduate Studies and Research
Department of Biology

We hereby approve the thesis of

Michelle Myers-Claypole

Candidate for the degree of Master of Science

______________________                        ______________________
Thomas Simmons, Ph.D.
Professor of Biology, Advisor

______________________                        ______________________
Bob Hinrichsen, Ph.D.
Associate Professor of Biology

______________________                        ______________________
David H. Pistole, Ph.D.
Professor of Biology

ACCEPTED

______________________                        ______________________
Timothy P. Mack, Ph.D.
Dean
School of Graduate Studies and Research
Lyme disease is the most prevalent vector-borne disease in the United States. Studies have shown a positive relationship between human cases of Lyme disease and the density of *Borrelia burgdorferi* infected blacklegged ticks (*Ixodes scapularis*), but there is little information on their population biology in Pennsylvania. I replicated in Blue Spruce Park (BSP), Indiana County, Pennsylvania classic tick population biology research conducted in the 1990s at the Louis Calder Center (LCC), Westchester County, New York. There was more leaf litter, a greater absolute density of ticks, and a higher collection efficiency of larvae and nymphs, but a lower collection efficiency of adults in BSP. There was greater overlap in peak relative densities of larvae and nymphs in BSP, and no change in overwintering adults, pre- and post-winter. The density of ticks in mid-western Pennsylvania is comparable to southern New York which is highly endemic for Lyme disease.