The Hunt for Wondrous Wolbachia

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Wolbachia is a maternally transmitted intracellular symbiont that is mainly localized in the reproductive tissues of arthropods. Wolbachia is responsible for feminization, parthenogenesis, male-killing, and cytoplasmic incompatibility, and is considered one of the most promising targets for disease/pest control. Wolbachia has been discovered within Mississippi, and to hunt for Wolbachia within my own community was the objective of the experiment. The experiment began with test subject collection. Ants from 7 different locations were tested (all imported red fire ants). DNA extraction was the initial step. DNA extraction was completed through maceration of the test subject, heating, and spinning. PCR (polymerase chain reaction) followed DNA extraction. The necessary items were added, and then the tubes were placed within a thermal cycler. Several steps were gone through by the thermal cycler including the initialization, denaturation, annealing, and elongation steps. Electrophoresis, the final step, was completed. This process allows one to actually see the DNA to look for the tell-tale presence of Wolbachia. It was determined that there was no Wolbachia present within the test subjects as two bands of DNA signifies Wolbachia while only single bands were detected. One comes to the conclusion then that Wolbachia is not present within the red fire ant populations of my school. That, however, does not mean that Wolbachia is not present within the insect populations of my school. Also, though Wolbachia was not actually discovered, the data proves valuable to the understanding of what Wolbachia interacts with and with what it does not.

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