

# 2008 Ohio Student Research Forum

The Ohio State University

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## RESEARCH ABSTRACT FORM

**TITLE:** Investigation of Black Shell Disease in Crayfish Using Chitin Clearing *Clavibacter agropyri*.

**AUTHOR:** Allison Willcox

**MENTOR(S):** Dr. Adam Leff

**INSTITUTION:** Department of Biological Sciences Kent State University Kent, Oh 44242

Black Shell Disease affects the exoskeleton of saltwater and freshwater crustaceans. The exoskeleton of a crayfish is composed of chitin, a biopolymer of  $\beta$  (1, 4) - linked N-acetylglucosamine with various other proteins. The bacteria causing the disease degrade the chitin to get into the bloodstream. The disease has an immense affect on the shellfish industry. Crustaceans infected with this disease cannot be used by the shellfish industry. If the disease is eradicated or treated the shellfish industry would grow as a result.

The purpose of this study was to infect healthy crayfish with a known chitin clearing pathogen of Black Shell Disease, and re-isolate that same pathogen from the crayfish. Re-isolating the original pathogen will tell us that it is the sole cause of Black Shell Disease or one of the species of bacteria that cause the disease.

Healthy crayfish were infected with the bacterium through two different treatment methods. Each treatment method was infected on separate days. The crayfish were then monitored for three months and bacterial samples were taken from the possible lesions.