World Academy of Science, Engineering and Technology
International Journal of Bioengineering and Life Sciences
Vol:11, No:10, 2017

Microbial Pathogens Associated with Banded Sugar Ants (Camponotus consobrinus) in Calabar, Nigeria

Authors : Ofonime Ogba, Augustine Akpan

Abstract : Objectives and Goals: The study was aimed at determining pathogenic microbial carriage on the external body parts of Camponotus consobrinus which is also known as the banded sugar ant because of its liking for sugar and sweet food. The level of pathogenic microbial carriage of Camponotus consobrinus in association to the environment in which they have been collected is not known. Methods: The ants were purposively collected from four locations including the kitchens, bedroom of various homes, food shops, and bakeries. The sample collection took place within the hours of 6:30 pm to 11:00 pm. The ants were trapped in transparent plastic containers of which sugar, pineapple peels, sugar cane and soft drinks were used as bait. The ants were removed with a sterile spatula and put in 10mls of peptone water in sterile universal bottles. The containers were vigorously shaken to wash the external surface of the ant. It was left overnight and transported to the Microbiology Laboratory, University of Calabar Teaching Hospital for analysis. The overnight peptone broths were inoculated on Chocolate agar, Blood agar, Cystine Lactose Electrolyte-Deficient agar (CLED) and Sabouraud dextrose agar. Incubation was done aerobically and in a carbon dioxide jar for 24 to 48 hours at 37°C. Isolates were identified based on colonial characteristics, Gram staining, and biochemical tests. Results: Out of the 250 Camponotus consobrinus caught for the study, 90(36.0%) were caught in the kitchen, 75(30.0%) in the bedrooms 40(16.0%) in the bakery while 45(18.0%) were caught in the shops. A total of 82.0% prevalence of different microbial isolates was associated with the ants. The kitchen had the highest number of isolates 75(36.6%) followed by the bedroom 55(26.8%) while the bakery recorded the lowest number of isolates 35(17.1%). The profile of micro-organisms associated with Camponotus consobrinus was Escherichia coli 73(30.0%), Morganella morganii 45(18.0%), Candida species 25(10.0%), Serratia marcescens 10(4.0%) and Citrobacter freundii 10(4.0%). Conclusion: Most of the Camponotus consobrinus examined in the four locations harboured potential pathogens. The presence of ants in homes and shops can facilitate the propagation and spread of pathogenic microorganisms. Therefore, the development of basic preventive measures and the control of ants must be taken seriously.

Keywords : Camponotus consobrinus, potential pathogens, microbial isolates, spread
Conference Title : ICE 2017 : International Conference on Entomology
Conference Location : Paris, France
Conference Dates : October 19-20, 2017