The Stage Development Preference of Bactrocera xanthodes (Pacific Fruit Fly) on Artocarpus altilis (Breadfruit) and the Effect of Bacteria Found in B. xanthodes on A. altilis

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This project was conducted to find more information on the relationship between Bactrocera xanthodes (Pacific Fruit fly) and Artocarpus altilis (Breadfruit). The project is divided into two sections, determining if B. xanthodes have a preference on the stage development of A. altilis (experiment 1) and the ecological relationship between the bacteria that the fly carries and its larvae (experiment 2). There are two hypotheses, B. xanthodes are most attracted to the last stage of the stage development of A. altilis and that the larvae of B. xanthodes cannot live on the breadfruit without the presence of its bacteria. The first experiment of the project was conducted by exposing one breadfruit of each stage to 25 pacific fruit flies. The second experiment is divided into two process, the gram staining method and the collection of the B. xanthodes larvae. Gram staining method is used to classify if the bacteria is gram negative or gram positive. After classifying the bacteria, B. xanthodes larvae were collected from breadfruits that were found to be infested with larvae. The bacteria were then applied onto a new breadfruit for experiment. Similarly, the larvae were also applied onto a breadfruit that has no infection. The results of the experiment supported hypothesis two but not one. The results show that B. xanthodes are most attracted to stage eleven of the breadfruit stage development and that the larvae tested with bacteria live longer than the result from the larvae by itself, which supports hypothesis two but not one.

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