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Ripe banana peel wastes for a mosquito - free environment

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Statement of the Problem: The amount of agricultural waste has been increasing rapidly all over the world. The Philippines ranked number four in the top ten banana producing countries in the world in the year 2015 in which the banana was the second leading agricultural export commodity of the country. The increase in the production of banana had also increased the production of its wastes commonly the exocarp or peel. As a result, the environmental problems and negative impacts of agricultural waste are drawn more and more attention. Therefore, there is a need to adopt proper approaches to reduce and reuse agricultural waste. In this study, the ethanol extract of *Musa acuminata* peel was bio-assayed for larvicidal potency against *Aedes aegypti*.

Methodology: The ripe banana peel wastes were collected from different food stores and restaurants and then manually prepared. Laboratory reared A. aegypti larvae were maintained at optimal conditions. Monitoring of mortality was done after 24 hours of exposure to three different concentrations with 1-hour intervals. Commercial larvicide and ethanol were used as control.

Results: The results of probit analysis showed that the extract exhibited evidence of larvicidal activity with 100% mortality recorded for 700 ppm in less than 1 hour of exposure. Histopathological results revealed serious damage in the tissues of the whole abdomen, specifically in the midgut portion of the larva.

Conclusion & Significance: The extract from ripe banana peel wastes demonstrates high toxicity to A. aegypti larvae. This can be considered a potential alternative source for the production of natural larvicides which will consequently aid in the prevention of mosquito-borne diseases as well as to help reduce the problem in agricultural wastes.

Recommendation: The larvicidal activity might be determined by the presence of bioactive compounds thus quantitative screening of the components can be considered for future studies.

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