Effect of seed and leaf extract of neem (*Azadirachta indica*) on selected sap-sucking insect pests of sugarcane

More than hundred insect species are associated with sugarcane plant in Sri Lanka including sucking pests causing a heavy economic loss through direct feeding and vectoring diseases; hence, require the control of pest populations. This study was conducted with the objective of determining the effect of neem seed and leaf extract on sap-sucking insect pests in sugarcane cultivation. The study was conducted at the Research Farm and the Entomology Laboratory of the Sugarcane Research Institute, Udawalawa from August to November 2022. Sugarcane Woolly Aphid (SWA) (*Ceratovacuna lanigera* Zehntner), Pyrilla Plant Hopper (*Pyrilla perpusilla* Walker) (PPH) and Sugarcane Pink Mealy Bug (PMB) (*Saccharicoccus sacchari*) were used as test insects on variety SL 96 128. Ethanol and aqueous extracts of neem seed and leaf were prepared in 2 %, 5 % and 10 % (W/V) concentrations for the bioassay. For each pest, mortality tests were conducted to study the toxicity effect of the extracts and feeding tests were conducted to measure the anti-feeding effect by using parafilm sachet technique and erythrosine dye test. Percentage mortality for toxicity effect and amount of honey dew-stained area and number of salivary flanges on leaf for anti-feeding effect were recorded. Treatment means and control means were compared using one-way and two-way ANOVA with Tukey’s multiple mean comparison test. Effective time period for all four extractions for each pest were recorded as 72 hour period. Ethanol extract of neem seed was significant (p < 0.05) for SWA and PPH. The best concentration of ethanol extract of neem seed is 10% (W/V). Mortality percentage of SWA, PPH and PMB for neem seed ethanol extraction were 100 %, 76.66, % 20 % at 10 % (W/V) respectively. Any of the tested extraction was not effective over PMB.