



ORIGINAL ARTICLE

QUANTIFICATION OF SAPONIN FROM SELECTED MEDICINAL PLANTS AND THEIR APHICIDAL ACTIVITIES AGAINST COTTON APHID, *APHIS GOSSYPHII* IN LABORATORY CONDITION

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Abstract: The current study was conducted to quantify saponin from different medicinal plants and investigate their aphicidal activities against *Aphis gossypii*. The saponin was quantified using HPLC analysis and aphicidal activities were investigated through laboratory bioassays for mortality and repellency effects. The HPLC results revealed that all tested plants have a sufficient amount of saponin although among tested plants the highest saponin contents of 53063 mg/L was recorded in *Porterandia anisophylla* followed by 42829 and 42510 mg/L in *Antidesma cuspidatum* and *Clidemia hirta*, respectively. The mortality bioassay reported 100% mortality after exposure of 72 hours in *C. hirta*, *P. macrocarpa*, *P. anisophylla* and *A. cuspidatum* at 1000 mg/L concentration. The lowest LC₅₀ value at 24 hours was recorded in *C. hirta* with 5444 mg/L followed by 5727, 6807 and 6943 mg/L in *P. macrocarpa*, *P. anisophylla* and *A. cuspidatum*, respectively. Similarly, the LC₅₀ values of 535, 570, 724 and 766 mg/L at 48 hours and 182, 188, 211 and 213 mg/L at 72 hours were recorded in *C. hirta*, *P. macrocarpa*, *P. anisophylla* and *A. cuspidatum*, respectively. The repellency bioassay results showed the highest repellency percentage of 76 and 74% in *P. anisophylla* and *C. hirta* followed by 62 and 58% in *P. macrocarpa* and *A. cuspidatum* at 1000 mg/L concentration, respectively. The findings of the study reveal and propose that the extracted saponin from mentioned plants can be used to suppress the population of *A. gossypii*.

Key words: Cotton aphid, *Aphis gossypii*, Saponin, HPLC, Medicinal plants, Crude extracts.

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