# Insect Growth Regulatory Activity of Some Extracts and Compounds from *Parthenium argentatum* on Fall Armyworm *Spodoptera frugiperda*

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The methanolic extract from aerial parts of *Parthenium argentatum*, afforded argentatin A and B. These compounds were evaluated for their effect on the fall armyworm (*Spodoptera frugiperda*). Toosendanin, a commercial insecticide derived from *Melia azedarach* was used as positive control. When tested for activity, using neonate larvae into the no-choice artificial diet bioassays, argentatin A, argentatin B and methanol extract caused significant growth inhibitory activity with $GC_{50}$ of 17.8, 36.1 and 6.4 ppm at 7 days, respectively, and increased the development time of surviving larvae in a concentration-dependent manner with RGI values of 0.40, 0.60 and 0.26, at 25.0, 25.0 and 5.0 ppm, respectively. In addition, it was possible to observe in most of the treated groups a significant delay in the time of pupation, adult emergence and deformities. Acute toxicity against adults of *S. frugiperda* was also found, MeOH extract had the most potent activity with $LD_{50}$ value of 3.10 ppm. In addition, MeOH extract and argentatin A caused acetylcholinesterase inhibition of 93.7% and 90.0%, at 5.0 and 50.0 ppm, respectively; whereas argentatin B had only slight inhibitory activity. Therefore, the MeOH extract was identified as insecticidal extract from *P. argentatum* with activity at concentrations above 15.0 ppm.