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# Antifeedant acetogenins from *Goniothalamus gardneri* (Annonaceae)

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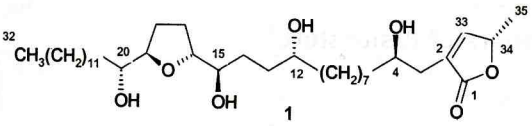
In a continuation of our search for biologically active and/or pharmaceutically important compounds from Sri Lankan endemic plants, the present study was carried out on the flowers of *Goniothalamus gardneri. G. gardneri* is an endemic tree of the family Annonaceae growing in the wet part of the country. Several acetogenins, fatty acids, sterols have been reported from the plant. Extracts of the *G. gardneri* showed mosquito larvicidal activity. Acetogenins isolated from the family Annonaceae exhibit a broad range of biological activities such as cytotoxic, antitumor, insecticidal, antiparasitic etc. Diamond back moth, *Plutella xylostella,* is a serious pest of cruciferous crops worldwide, and has developed resistance against almost all kinds of insecticides available in the market. Thus there is a need of find new insecticides with high efficiency and environment friendly. Herein we report on potent antifeedant activities of two acetogenins isolated from the *G. gardneri* against *P. xylostella.*

The methanol extract of the flowers of *G. gardneri,* upon MPLC and Flash chromatography, yielded two acetogenins **1** and **2**. Structures determination of **1** and **2** were done by the comparison of $^{1}H/^{13}C$ NMR data with reported data and Co-TLC with the authentic samples. In the leaf-dipping method for insecticidal activity, percentage mortality and feeding area were observed and recorded after 24, 48 and 72 h. Cabbage leaves were used to feed the insects. $LC_{50}$ values of **1** are 930.60 ppm/ 24h, 356.14 ppm/ 48h and 161.02 ppm/ 72h and **2** are 725.97 ppm/ 48h and 648.13/ 72h. Eventhough the $LC_{50}$ values of the compounds **1** and **2** were moderate, they acted as good antifeedants, and the feeding area of leaves were very small compared to the control. When the compound **1** used for the treatment, the mean feeding areas were 0.875 $mm^2$/ 24h, 3.125 $mm^2$/ 48h, 5.875 $mm^2$/ 72h and the mean feeding areas when **2** has used were 4.438 $mm^2$/ 24h, 38.438 $mm^2$/ 48h, 55.688 $mm^2$/ 72h. Mean feeding areas in the control were 18.25 $mm^2$/ 24h, 357.00 $mm^2$/ 48h and 782.00 $mm^2$/ 72h (Total feeding area of the leaf disc was 788.00 $mm^2$).

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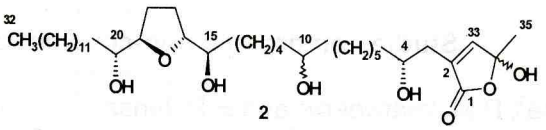


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