

## THE ATTACK OF *Trigona spinipes* IN *Artemisia annua* PLANTS CAN AFFECT ITS ARTEMISININ PRODUCTION, AN ANTIMALARIAL DRUG.

**Autores:** *Kátia Sampaio Malagodi-Braga*<sup>1\*</sup>, *Kenny Roncon*<sup>1</sup>, *Waldemore Moriconi*<sup>1</sup>, *Pedro Melillo de Magalhães*<sup>2</sup>.

**Instituição:** <sup>1</sup>*Embrapa Meio Ambiente*, <sup>2</sup>*Centro Pluridisciplinar de Pesquisas Químicas, Biológicas e Agrícolas (CPQBA) – UNICAMP*.

**Contato:** Rodovia SP 340, Km 127,5 Caixa Postal 69, Jaguariúna, SP, Brasil.

**Email:** [katia@cnpma.embrapa.br](mailto:katia@cnpma.embrapa.br)

Malaria is still responsible for a large number of deaths worldwide. The leaves of *Artemisia annua* L. (Asteraceae) a native shrub of Asia acclimated in many regions of the world are a source of artemisinin, the main molecule in falciparum malaria therapy. The species have become an interesting crop since the recommendation of the World Health Organization for use artemisinin in ACTs (Artemisinin-based combination therapies). In October 2011, Embrapa Meio Ambiente in partnership with the Multidisciplinary Center of Chemical, Biological and Agricultural Researches (CPQBA) of the State University of Campinas (UNICAMP) installed on its site a plot with 400 plants. In January 2012, we observed *Trigona spinipes* Fabr. (Hymenoptera: Apidae) a stingless bee known as irapuá cutting the artemisia stems using their mandibles. We found longitudinal injuries from 0.5 cm to 15.0 cm occurring close to the base in the main stem of these plants where the number of bees per plant varied from 2 to 30 (n=12). The damage was used to collect sap which was dehydrated by the bees before returning to the nest. We made monthly evaluations (January-March) to classify all plants in relation to the degree of attack severity and we found an increase in the frequency of plants severely attacked from 5% to 25% with time. In general, plants with high attack severity have been continuously exploited by bees and showed a decomposition process around the injuries which attracted other insects (flies, beetles, wasps) resulting on early death of the plant. Comparing these plants with those without such degree of attack severity we verified that, in the first ones, there was a reduction of biomass (dry weight) and an early senescence. Therefore, the attack of *T. spinipes* in *Artemisia annua* plants can affect the production of artemisinin.

**Apoio:** Embrapa Meio Ambiente.

**Palavra chave:** stingless bee - Malaria - pest behavior - medicinal plant – artemisia.