

Ayurvedic nightshade deadly for dengue mosquito

April 3 2008

Mosquitoes responsible for spreading disease are increasingly becoming resistant to synthetic insecticides. Now research published in the online open access journal *BMC Complementary and Alternative Medicine* suggests that the berries of a weed common to India, *Solanum villosum* (*S. villosum*), have potential for keeping mosquitoes at bay.

S. villosum is a member of the nightshade family known for its medicinal properties and commonly used as an ayurvedic herb.

Nandita Chowdhury, Anupam Ghosh and Goutam Chandra from Burdwan University, West Bengal, India used juice and extracts from the berries of *S. villosum*, on *Stegomyia aegypti*, (*S. aegypti*), which can spread a number of viruses including dengue fever and yellow fever and is commonly known as the yellow fever mosquito.

The authors found that *S. villosum* was particularly effective at eliminating *S. aegypti* larvae. Although it was not as potent as a chemical insecticide such as Malathion, the authors suggest that plant extracts from *S. villosum* have the potential for use in stagnant water where the mosquitoes breed. The next step is to identify the active compounds in the berries and to test whether these are effective in field trials.

“We found that these plants produce two types of phytochemicals,” says Chandra. “The most interesting are the secondary phytochemicals, such as steroids, terpenoids, flavonoids and alkaloids – these act as a repellent which protect against the lethal effects of the larval mosquitoes.”

A number of plants have been reported for their anti-mosquito activity. Most of the studies report the active compounds to be steroidal saponins, which are thought to kill larvae by interfering with their cuticle membranes. However, only a few botanicals have moved from the laboratory to field use.

Around two-fifths of the World's population is at risk from dengue fever, which is characterized by a high fever, pain and rashes. Dengue hemorrhagic fever is a potentially lethal complication, affecting mainly children.

Source: BioMed Central

Citation: Ayurvedic nightshade deadly for dengue mosquito (2008, April 3) retrieved 7 May 2024 from <https://phys.org/news/2008-04-ayurvedic-nightshade-deadly-dengue-mosquito.html>

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