

Scientists identify insect-repelling compounds in *Jatropha*

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ARS scientists are evaluating compounds to identify active ingredients that demonstrate efficacy for killing mosquitoes. Shown here is an *Aedes* (*Ochlerotatus*) sp. mosquito on human skin. Credit: ARS Photo Unit

A tip about a folk remedy plant used in India and Africa to ward off bugs has led to the discovery of insect-repelling compounds.

U.S. [Department of Agriculture](#) (USDA) scientists have identified components of *Jatropha curcas* [seed oil](#) that are responsible for mosquito repellency. Researchers at the Agricultural Research Service (ARS) Natural Products Utilization Research Unit (NPURU) in Oxford, Miss., often find effective plant-derived compounds to deter insects by gathering plants in the wild and investigating those used in traditional folk remedies. ARS is USDA's principal intramural scientific research agency.

After learning that people in India burn *J. curcas* seed oil in lamps to keep insects out of their homes and other areas, NPURU chemist Charles Cantrell extracted smoke from the plant in a laboratory and

analyzed its properties. [Free fatty acids](#) and [triglycerides](#) were among a number of active compounds found to be effective at preventing mosquitoes from biting.

Researchers have known for some time that fatty acids repel insects, but this was the first known report that identified triglycerides as having mosquito repellent activity, according to Cantrell.

Working closely with colleagues at ARS and the National Center for Natural Products Research at the University of Mississippi, Cantrell is exploring additional promising compounds from other plants. By combining these or similar compounds from other plants with those in *Jatropha* species, scientists might be able to develop a more effective product.

More information: [Read more](#) about this and other research to protect U.S. troops from harmful insects in the November/December 2012 issue of *Agricultural Research* magazine.

Provided by United States Department of Agriculture

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