

The closest relatives of papaya are four species from Mexico and Guatemala

November 20 2013



This image shows the fruits of *Jarilla heterophylla*, one of the closest papaya relatives. Credit: Fernanda Antunes Carvalho

For many decades, researchers thought the closest relatives of papaya were certain trees from the Andes, the so-called highland papayas. A study employing DNA sequences from all species of the papaya family

instead revealed that the closest relatives of papaya are three herbaceous species and a small tree with stinging hairs occurring from Mexico to Guatemala and El Salvador. The stingy-haired tree in fact is only known from cloud forests in the Sierra de Juarez in Oaxaca, southern Mexico.

The three herbaceous [species](#) are well known to Mexicans living in the area, and Mexican botanists had figured out their correct names some time ago. This was overlooked, however, in the most recent treatment, resulting in an erroneous merging and choice of names of two species.

In a paper published in *PhytoKeys*, Carvalho and Renner clarify the species boundaries, illustrate the least known species, and provide a key to all taxa comprising the papaya sister group.

"Before our studies the closest relatives of papaya were known only by local people living along the areas where these plants are growing. These people could never imagine they were eating a close relative of the famous papaya because the fruits and leaves are very unlike." comments Dr. Carvalho. "For some people is hard to believe that the highland papayas from the Andes are not closer related to papaya than are these Mesoamerican herbs. However, the fact that the closest relatives of [papaya](#) are endemic to Central America coincides with the distribution of the wild-form of the crop, which has much smaller fruits and thinner pulp than the ones we can buy in supermarkets."



This image shows *Jarilla caudata* with a fruit. Credit: Fernanda Antunes Carvalho



This image shows the male inflorescence of *Jarilla heterophylla*. Credit: Fernanda Antunes Carvalho

More information: Carvalho FA, Renner SS (2013) Correct names for some of the closest relatives of *Carica papaya*: A review of the Mexican/Guatemalan genera *Jarilla* and *Horovitzia*. *PhytoKeys* 29: 63–74. [DOI: 10.3897/phytokeys.29.6103](https://doi.org/10.3897/phytokeys.29.6103)

Carvalho FA, Renner SS. 2012. A dated phylogeny of the papaya family (Caricaceae) reveals the crop's closest relatives and the family's biogeographic history. *Molecular Phylogenetics and Evolution* 65: 46–53.

Carvalho FA. 2013. e-Monograph of Caricaceae
herbaria.plants.ox.ac.uk/bol/caricaceae

Provided by Pensoft Publishers

Citation: The closest relatives of papaya are four species from Mexico and Guatemala (2013, November 20) retrieved 27 April 2024 from <https://phys.org/news/2013-11-closest-relatives-papaya-species-mexico.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.