

## Genetic relationships among *Heliconia* (Heliconiaceae) species based on RAPD markers

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Genet. Mol. Res. 9 (3): 1377-1387 (2010)

Received March 20, 2010

Accepted May 15, 2010

Published July 13, 2010

DOI 10.4238/vol9-3gmr847

**ABSTRACT.** The family Heliconiaceae contains a single genus, *Heliconia*, with approximately 180 species of Neotropical origin. This genus was formerly allocated to the family Musaceae, but today forms its own family, in the order Zingiberales. The combination of inverted flowers, a single staminode and drupe fruits is an exclusive characteristic of *Heliconia*. Heliconias are cultivated as ornamental garden plants, and are of increasing importance as cut flowers. However, there are taxonomic confusions and uncertainties about the number of species and the relationships among them. Molecular studies are therefore necessary for better understanding of the species boundaries of these plants. We examined the genetic variability and the phylogenetic relationships of 124 accessions of the genus *Heliconia* based on RAPD markers. Phenetic and cladistic analyses, using 231 polymorphic RAPD markers, demonstrated that the genus *Heliconia* is monophyletic. Groupings corresponding to currently recognized species and some subgenera were found, and cultivars and hybrids were found to cluster with their parents. RAPD analysis generally agreed with morphological species classification, except for the position of the subgenus *Stenochlamys*, which was found to be polyphyletic.

**Key words:** Genetic variability; *Heliconia*; RAPD; Molecular marker; Phylogenetic relationships; Zingiberales