

## Morphologic and Genetic Relationships between Wild and Domesticated Forms of Peppers (*Capsicum frutescens* and *C. chinense*) -74

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*Capsicum chinense* and *C. frutescens* peppers are part of the Brazilian biodiversity, and the Amazon Basin is the area of greatest diversity for them, especially for the former. However, little is known about their evolutionary history. Peppers can be classified as domesticated, semi-domesticated, or wild based on morphological changes observed during the domestication process, as a result of artificial selection (eg, suppression of natural dispersal mechanisms, among others). The objectives of this work were to study phylogenetics and genetic diversity of *Capsicum* spp. based on ISSR (Inter Simple Sequence Repeat) markers and morphological characteristics related to the degree of domestication. Aiming to identify genotypes with wild and domesticated characteristics, 26 accessions (9 *C. frutescens* and 17 *C. chinense*) from Embrapa Vegetables germplasm bank were characterized using morphological descriptors and ISSR molecular markers. Of the 72 primers tested, 42% showed amplification and produced 136 amplicons with some of the primers, namely i7Pv and i57Zm, allowing the identification of each species. Four accessions collected in the Amazon region (CNP 4315, CNP 4372, CNP 4337 and CNP 4325B) popularly known as olho-de-peixe or olho-de-periquito were molecularly classified as *C. chinense* and showed fruit with characteristics similar to the wild *Capsicum* genotypes: upright position, rounded to campanulate shape, small size (1.0 cm long and 0.8 cm wide), average weight of 0.2 g, dark-red color when ripe, easy detachment of calyx and presence of calyx annular constriction (discriminative of *C. chinense*). In *C. frutescens* neither morphologic nor molecular differences among domesticated and wild forms were clearly found. A significant correlation was found between morphological and molecular characterization, and the combination of the two analyses was effective in identifying and classifying the wild forms, contributing to evolutionary studies in the genus.

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