

Confirmation of cross-fertilization using molecular markers in ornamental passion flower hybrids

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ABSTRACT. Several interspecific *Passiflora* hybrids are produced in the northern hemisphere for the ornamental plant market. In Brazil, production of passion flower hybrids is limited to the introgression of genes into the main cultivated species, yellow passion fruit, to be used as rootstocks. Confirmation of hybridization in the initial developmental stage is important for breeding perennial and sub-perennial plants, such as passion flowers, reducing time and costs in plant stock maintenance. In order to obtain F₁ hybrids with ornamental potential, four species of *Passiflora* (*P. alata*, *P. gardneri*, *P. gibertii*, and *P. watsoniana*) from the Active Germplasm Bank at UESC were hybridized. Flower buds, in pre-anthesis, of the genitors were previously protected, and the female buds were emasculated. To confirm hybridization, the genomic DNA of the genitor species and the supposed hybrids was extracted and RAPD primers were used

to obtain molecular markers and select passion flower interspecific hybrids. Eight primers were used to confirm hybrids derived from *P. gardneri* with *P. alata*, *P. watsoniana* with *P. alata*, *P. watsoniana* with *P. gardneri*, and *P. gardneri* with *P. gibertii*; 75, 50, 45, and 46% of the informative bands, respectively, confirmed the hybrid nature of these plants. The RAPD technique was effective in the early identification of hybrids; this will be useful for development of hybrid *Passiflora* progeny.

Key words: *Passiflora* L.; Interspecific hybridization; RAPD; Paternity test