

The Microscopic Study of Morphological Variation within Seeds of *Passiflora* subgenus  
*Decaloba*

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This study examined the morphology of the seed coats of *Passiflora* species representing the major lineages within the subgenus *Decaloba* using light and SEM microscopy. This was accomplished through preparing seeds by removing the sarcotesta from the sclerotesta and then to orient the seeds next to a ruler establish scale, micropylar end facing downward with the raphe pointing away from the ruler. The seeds were then photographed using a Nikon stereoscopic SMZ-10 microscope with Canon Power Shot A640 camera attachment. In addition, another sample of seeds were prepared in the same fashion—excluding the ruler—and attached to stubs with a colloidal graphite glue. These stubs were then photographed with a Nikon/JEOL Neoscope JCM-5000 SEM. The photographs were used to compose charts and keys to organize the seeds based on morphological data. This data showed that the seeds could be split into three groups. The first group consisted of the outgroup from the subgenus *Deidamioides*; the second and third groups come from the subgenus *Decaloba*, with the second group consisting of punctate-reticulate seeds and representing several different infrageneric supersections; and the third group, consisting of ribbed seed species, all from the supersection *Decaloba*. The seeds of the second group are larger and longer than seeds from the other group and found in more basal lineages in subgenus *Decaloba*. The seeds of the third group varied in size and rib texture with some seeds possessing smooth or textured, rugose ribs and certain species had seeds very small (barely 3mm). No other definite patterns could be found within the third group, but based on seed morphology alone, a secondary outgroup to subgenus *Decaloba* might consist of *P. obovata* due to its unique rib texture but this would have to be followed up with further study.