

Early Sex Discrimination using Morphological Markers in Papaya (*Carica papaya* L.)

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Abstract—Papaya is a commercial fruit crop cultivated throughout the tropical and sub-tropical regions of the India, belongs to the family Caricaceae. Being a polygamous plant, it has three types of sex forms, viz. male, female and hermaphrodite. Sex form is one of the most important traits for genetic improvement and production in papaya. This investigation which was carried out at the Division of Fruits and Horticultural Technology, ICAR-Indian Agricultural Research Institute, New Delhi during 2014-2015 to identify the morphological markers associated with sex expression in papaya. The dark brown colour exhibited higher number of male plants among the dioecious genotypes (PusaNanha and P-7-2 x SAM). However black colour seeds were exhibited greater number of the female plants in case of PusaNanha and P-7-2 x SAM and the higher number of male plants observed in a range of 3.1 to 3.6 mm thickness of petiole in PusaNanha and P-7-2 x SAM. From the present study it is concluded that among morphological traits, black and brown seed colour was most reliable in predicting female and hermaphrodite plants.

Keywords: Papaya, Sex expression, seed colour, petiole length, stem colour.