

Correlation studies in palmyrah (*Borassus flabellifer* L.) genotypes

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ABSTRACT

Correlation studies were carried out for neera yield with some of its component traits in 48 genotypes of palmyrah. The genotypes were collected from various palmyrah palm growing regions of India such as Tamil Nadu, Kerala, West Bengal and Puducherry UT during the period 2005-2008. Five morphological traits viz., tree height, trunk girth, number of leaves per palm, petiole length and total length of leaves were recorded at the time of germplasm collection at the site itself. Besides, the reproductive component characters such as number of bunches per palm, fruit length, fruit weight, flesh weight, individual seednut weight, seed length, seed circumference and neera yield were also recorded at the time of flowering and fruiting phase of the palms. The recorded data were subjected to standard statistical procedures to study the correlation between neera yield with morphological and reproductive traits. The results revealed the existence of positive association between neera yield and its components in palmyrah palm. Therefore, it would be highly rewarding to lay due emphasis on the selection of these traits for rapid high neera yield in palmyrah.

Key words : Palmyrah, Genotypes, Correlation, Neera.

Palmyrah palm, adorns the dry landscape of the semi arid regions of Tamil Nadu, Andhrapradesh, Orissa, West Bengal, Bihar, Karnataka and Maharashtra. India has nearly 102 million palms and half of the trees are in Tamil Nadu. Out of 51.9 million trees in Tamil Nadu, more than 50% of palms are concentrated in the southern districts of Thoothukudi, Tirunelveli, Virudhunagar and Ramnad, while Thoothukudi district alone has a major share of 10 million trees. It has multifaceted utility for mankind and hence rightly quoted as “Kalpaka Vriksha” and declared as state tree of Tamil Nadu, Government of Tamil Nadu (Anon., 1999).

The sweet sap tapped from inflorescence of both male and female sexes is commonly known as “Neera” (Davis and Johnson, 1987). It contains mineral such as calcium, phosphorus and iron and vitamins like ascorbic acid, thiamin, riboflavin and niacin. It has laxative and cooling properties. It is also used for treating sour throat and dry cough. Besides sweet neera, the endosperm of immature seed nuts from young trait as a delicacy during summer and is known in “Nungu”. Matured fruits are roasted and the mesocarp is also consumed. From the fruit pulp ice cream is prepared with the most delicacy. From the germinated endosperm thavan is taken out and relished. Varieties of fancy and utility articles are made from palm leaves, veins and roots. Palm leaves have been used to write scripts by the ancient people from time immemorial. Matured leaves are cured and used for thatching while senesced leaves are utilized as firewood.

The matured outer trunk is used in construction as pillars, Beams and rafters (Kalarani and Annathurai, 1991).

Botanically it is known as *Borassus flabellifer* L. and belongs to the family Arecaceae. The Natural occurrence of palmyrah palms is noticed in countries like India, Pakistan, Bangladesh, Srilanka, Myanmar, Thailand, Malaysia, Indonesia and African countries like Nigeria, Congo, Sudan, and Tanzania etc. (Sankaralingam *et al.*, 1999). It is a delicious and drought tolerant palm.

Despite this multivariate utility for human civilization the palm is neglected by the farming community due to its prolonged juvenility, sexual dimorphism and drudgery in tree climbing for neera collection. Hence, it is need of the hour to expose the possibilities of identification of dwarf, high neera yielding palmyrah types with early bearing. With this background various palm explorations were made to the different palmyrah growing parts of India under DBT funded project to identify and collect elite palmyrah types.

The neera yield is polygenically inherited trait that depends directly or indirectly on many other traits affected by a number of its components. The information about the association its components with neera yield is useful in any selection programme. Information on this aspect is scanty in palmyrah. The present investigation was, therefore, undertaken to study the association of neera yield with its components using correlation analysis.