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Evaluation of acid lime (*Citrus aurantifolia* Swingle) cultivars for yield attributes

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Abstract : Evaluation studies were carried out in acid lime for selection of cultivars suitable for growing in the tropical region of Tamil Nadu. Six acid lime cultivars *viz*., PKM1, Saisarbati, Pramalini, Vikram, Tenali and Kasipentla were evaluated for two seasons (July – August and December – February) at Horticultural College and Research Institute, Periyakulam, under Tamil Nadu conditions during 2006 – 2008. Among the cultivars, the highest number of flowers per shoot in both the seasons (10.85, and 12.13), number of fruit set per shoot (7.67 and 8.25), number of fruits retained per shoot(4.85 and 5.35) ,highest number of fruits per tree (384.85 and 406.35 fruits/tree) and yield per tree (20.54 and 22.56 kg) was recorded in cultivar Vikram during both the season. The same genotype Vikram also recorded highest fruit weight (45.53g, and 47.33) and volume of fruits (44.95 and 46.36) during both the seasons. The highest fruit length (6.02) fruit diameter (5.86) was recorded in cultivar Tenali during first season, and during the second season fruit length (5.78) and fruit diameter (6.03) was recorded in the cultivar Vikram. The other genotype PKM – 1 followed as the next best performer for yield attributing characters.

Key words : Acid lime cultivars, Evaluation, Number of fruits, Yield

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Acid lime (*Citrus aurantifolia* Swingle) is an important commercial species of citrus considered to be indigenous to India, and is extensively cultivated in many states under tropical and subtropical climatic conditions. India is the largest producer of acid lime in the world, (Chadha, 2002). In Tamil Nadu, it is widely cultivated under rainfed and irrigated conditions in the districts of Dindigul, Trichy, Tirunelveli, Virudhunagar, Ramanathapuram, Madurai, Theni etc., in an area about 1,060 ha with a production of about 4,400 tonnes per annum (Anonymous, 2003). Availability of a wide gene pool in the form of genetic diversity is a prerequisite for crop improvement. Genetic diversity is the extent of genetic variability among the individual in a single species and between the species. In India, collection and conservation of citrus species/ types started long back, in mid of 19th century. In recent years collection and conservation were primarily made for the quality of fruits. The great genetic diversity is under serious threat of rapid extinction or depletion of the germplasm mainly due to population pressure and farmers preference (Singh *et al*., 2004). Though acid lime has been in cultivation for many years, no significant achievements have been obtained in cultivar improvement. A successful progress in breeding depends upon the genetic variability present in the population.

Acid lime is more popular for its use in preparation of refreshing juice and in seasoning foods and making of pickles. Acid lime pickles are very popular not only in India but also in other parts of the world. India exports small quantum of acid lime pickles to other countries *viz*., USA, England etc. It is also used in the manufacture of lime squash either alone or in combination with lemons and other citrus fruits. It is a good source of vitamin C and has good antioxidant properties.

The purpose of the present study was to evaluate different varieties of acid lime cv. PKM1, Saisarbati, Pramalini, Vikram, Tenali and Kasipentla with emphasis on their agronomic performance, yield attributing characters and increasing adaptability under tropical region of Tamil Nadu.