Assessing the Sustainable Growth of Non-Traditional Arid Zone Fruit Crops under Semiarid Vertisol Condition of Tamil Nadu

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The semi-arid regions of Tami Nadu are characterized by extreme weather conditions and poor soil and water quality, which limit the productivity of fruit crops. However, to enhance the effective utilization of land area, preliminary research was conducted to assess the sustainability of growing non-traditional fruits crops under the semiarid vertisol condition of Tamil Nadu. Research was conducted at the Regional Research Station, Tamil Nadu Agricultural University, Aruppukottai, during the year 2019-2021. The research station is located in semi-arid region, which experiences an annual average rainfall of 770 mm in about 42 rainy days mainly during the North-East Monsoon. The soil type is vertisol (Black clay loam soil with underlying canker nodules) and soil depth ranges between 0.6 to 1.2 m. This research station caters the needs of the people living in semi-arid zones of Sothern districts of Tamil Nadu. In order to carry out the experiment, different nontraditional fruit crops were collected from different zones of India and introduced into Regional Research Station, Aruppukottai. The fruit crops introduced were Karonda (*Carissa congesta*), Chironji *(Buchanania lanzan),* Mahua (*Bassia latifolia*), Khirni (*Manilkara hexandra*), Bael (*Aegle marmelos*), Wood apple (*Feronia limonia*) and Jamun (*Syzigium cumini*) from Indian Council of Agricultural Research (ICAR) - Central Horticultural Experimental Station (ICAR–CHES), Godhra, Gujarat and Phalsa (*Grewia asiatica*), Lasoda (*Cordia myxa*), Mulbery, Apple ber plants and Khejri (*Prosopis cineraria*) from ICAR - Central Institute for Arid Horticulture (CIAH), Bikaner, Rajasthan. After evaluating growth performances for one year of period, the Karonda var. Thar Kamal, Phalsa var. Thar Pragati, Lasoda var. Thar Bold, Mulbery var. Thar Lohit and Thar Harit and Khejri var. Thar Shobha showed comparatively higher mean growth performances and initiation of flowering under semi-arid vertisol condition. Mass multiplication is in progress for commercial cultivation.

Keywords: Semiarid zones, Arid zone nontraditional fruits, Vertisol condition