

Cropping Systems in tropical vegetables

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Cropping system is defined as the cropping pattern followed on a farm and its interactions with farm resources, other farm enterprises and production technology. The yearly sequence and spatial arrangement of crops and fallow on a given area is termed as cropping pattern. Despite the concerted research efforts, the production and productivity of vegetable crops in India is low and hence it is difficult to meet out the *per se* vegetable consumption by an individual as against the WHO recommendations. In order to increase the production, increasing cropping intensities following different cropping pattern is one of the ways, since it is literally impossible for increasing the production horizontally. Also there is a need for vegetable based cropping systems that use alternate management practices to reduce pesticide use and protect the environment. This review paper discusses the various cropping systems which are successful in some of the tropical vegetables including few tuber vegetables.

Multiple cropping:

Multiple cropping is a one year cropping system in which two or more crops are grown in succession within a year. Crop rotation is a system of growing different crops in a regular sequence. Succession cropping is system of growing two or more crops in succession on the same land within a year. Most of the vegetables are of short duration hence are most suited for a multiple cropping system. No cropping sequence will be appropriate or relevant for all places (Randhawa and Singh, 1977). Joshi and Shukla (1997) reported that tomato recorded higher fruit yield when planted in March as compared to

May planting. Pea sown after capsicum gave higher yield than after tomato. It might be due to the nutrient exhaustive nature of the tomato, being a deep rooted crop. Saha and Jha (1999) reported among the tomato varieties, a remarkably good fruit yield of 60.7 and 47 t. ha⁻¹ was recorded with BT 18 variety during 1994-95 and 1995-96, respectively when planted on 16 November with 15 day old seedlings in rice fallows. Hanna (2000) reported that double cropping muskmelons with a nematode resistant tomato cultivar appears to be a good cultural practice to improve muskmelon yield in nematode infested soil regardless of the colour of the polyethylene used to mulch the previous tomato crop. Baskar and Bhoi (2001) reported that winter sorghum-summer okra was the most remunerative crop sequence in irrigated semi-arid tract of Maharashtra, whereas sorghum – brinjal sequence proved to be the next best crop sequence with optimum irrigations at 80mm CPE to winter sorghum and 60 mm CPE to summer okra in the crop sequences.

Relay intercropping is a form of multiple cropping in which a second crop is planted in to the stands of the first crop when the first crop has reached its reproductive stage but before it is harvested (Andrews and Kassam, 1976). This practice can be used to produce two crops in one year in areas where the growing season is too short for sequential or double cropping. The well-known example of relay intercropping is that of beans (*Phaseolus* spp.) relayed maize (Pinchinat *et al.*, 1976) which is a practice used by indigenous peoples in the Americas and one that continues to be common in Latin America.

Intercropping:

Intercropping is a cropping system

Key words : Tropical vegetables, Cropping system in tropical vegetables