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Cultivating underutilized vegetables in arid region

Dryland horticulture has immense significance in providing nutrition rich food, social security and eco-restoration to the inhabitants of desert and tribal areas of Rajasthan. While assessing distinctness of hot arid and semi-arid agro-climate (1994–1997), it is realized that non-availability of requisite crop–genotypes and production practices are two prime constraints in success of vegetable culture. Traditionally, kachri (*Cucumis melo* var. *callosus* / *agrestis*), kakadia / snap melon (*Cucumis melo* var. *momordica*), mateera (*Citrullus lanatus*), tinda (*Praecitrullus fistulosus*) and guar (*Cyamopsis tetragonoloba*) is grown with mixed cropping. Besides, khejri (*Prosopis cineraria*) is playing vital role in long-established farming system, and its tender pods are used as vegetable. With the establishment of national centre in 1993 at Bikaner, systematic research work was started for germplasm conservation and utilization in native crop-plants having vegetable potentialities. There is a scope in getting quality marketable yield adopting production site management concept, provided trait specific genotypes. With khejri based models, higher yield in prioritized vegetables and income @ ₹ 75,000–2,25,000 ha/year is obtained compared to traditional cropping (₹ 23,000–42,000). Thus, technological advancement in under-exploited vegetables is a boon toward doubling farmer's income in resource-poor arid environment.

VEGETABLE production with under-utilized crop plant species is pre-dominantly found to be the most appropriate and stable. At present, exploitation of under-utilized crops and native perennial plants of vegetable significance is negligible, and productivity and quality of produce is very marginal and unorganized. This is primarily because of un-availability of desirable crop–genotypes suited to the prevailing climatic situations and/ or environmentally–stressed production sites, unavailability of requisite quality seed / planting material of the recommended crop–genotypes and lack of apposite techniques. Therefore, there are essentially two complementary requirements, i.e. improvement in genetic make-up as provisions for desirable crop-genotypes and creation of favourable micro-climate at production site of targeted zone to minimize the ill-effects of adversity.

Vegetable Cultivation in Arid Region

In the vast spread arid farm-lands, cultivation of pearl millet, cluster bean, moth bean, sesame, kachri, snap melon, mateera, tinda and tumba is done as component crops between natural plantations of khejri, besides native crop-plants (jharber, bordi, lasora, pilu, ker, kumat, phog, khimp, sewan, etc.) forming traditional farming systems. With changed scenario, now, focus is shifted from sustenance to remunerative but mono-cropping is risky for dry-land horticulture. Therefore, traditional systems pre-dominantly mixed cropping needs multi-dimensional

Variability in kachri

Fruit bearing in kachri