

## Arid zone is a treasure trove of indigenous and minor vegetables

The hot arid zone of the country is spread over nearly 31.7 million hectare area of which 41.5% is arable and 19% is cultural wasteland. The major part of hot arid region is found in Western Rajasthan (19.62 Mha) and North-western Gujarat (6.2 Mha). This region is endowed with several vegetable crops which are not only rich source of nutrients but also possess several medicinal properties. The promising material has been exploited in the form of improved varieties having tolerance against biotic and abiotic stresses which are making strident in arid region of the country. The neglected crops like spine gourd and *jhaar karela* are gaining popularity due to their anti-diabetic properties which also possess resistance against biotic and abiotic stresses.

THE DESERT has diverse agro-climatic conditions (arid, semi-arid and sub-humid tropics) and the nature has imposed some restrictions which limits the scope for diversification through vegetable crops. However, these conditions favour successful cultivation of several vegetable crops like kachri (*Cucumis callosus*), snapmelon/phoot (*Cucumis melo* var. *momordica*), mateera (*Citrullus lanatus*), long melon/kakri (*Cucumis melo* var. *utilissimus*), round melon/tinda (*Praecitrullus fistulosus*), ridge gourd (*Luffa acutangula*), cluster bean (*Cyamopsis tetragonoloba*), etc. leafy (palak, *Chenopodium*, fenugreek, *Amaranthus*), legumes (Indian bean) also have good potential under limited irrigation water facility by adopting suitable production and protection technologies. The vegetable crops like *arya* (*Cucumis melo* var. *chate*), *mathkachar*, spine gourd (*Momordica dioica*), *jhaar karela* (*Momordica balsamina*), ivy gourd (*Coccinia grandis*), etc. are naturally grown in different parts of arid zone particularly on neglected places and possess wide genetic diversity. The arid zone is endowed with wide genetic diversity of several vegetable crops given in Table 1.

ICAR-Indian Institute of Arid Horticulture, Bikaner, Rajasthan is maintaining large number of germplasm of different arid vegetable crops. The collected germplasm has been evaluated, characterized, purified and utilized in improvement programmes. Several promising varieties suitable to arid ecosystem has been developed by utilizing the available germplasm. The promising improved varieties are mentioned in Table 2.

### Kachri (*Cucumis callosus*)

Kachri is a drought hardy and high temperature tolerant crop (up to 46°C), found in the arid zones during rainy season. Unripe fruits are bitter in taste but at ripening they become edible. The mature fruits (Table 3)

**Table 1.** Vegetable crops having wide genetic diversity in arid zone

Common name	Botanical name	Chromosome no. (2n)
Kachri	<i>Cucumis callosus</i>	24
Snapmelon	<i>Cucumis melo</i> var. <i>momordica</i>	24
Long melon	<i>Cucumis melo</i> var. <i>utilissimus</i>	24
Arya	<i>Cucumis melo</i> var. <i>chate</i>	24
Round melon	<i>Praecitrullus fistulosus</i>	24
Spine gourd	<i>Momordica dioica</i>	28
Jhaar karela	<i>Momordica balsamina</i>	22
Mateera	<i>Citrullus lanatus</i>	22
Bitter apple	<i>Citrullus colocynthis</i>	22
Cluster bean	<i>Cyamopsis tetragonoloba</i>	14
Moth bean	<i>Vigna aconitifolia</i>	22
Khejri	<i>Prosopis sineraria</i>	24

are usually cooked with various vegetable preparations, *chutney*, pickles and are also used for garnishing the vegetables or as salad. Kachri is one of the components of the delicious vegetable popularly known as *Panchkuta* in the desert districts of north-western India. Kachri can be cultivated successfully both during rainy and spring-summer season. It requires warm and dry weather with plenty of sunshine for growth and production. The optimum temperature for seed germination is 20-22°C whereas, 32-38°C is optimum for vegetative growth and fruit setting. Its growth is severely retarded below 12°C and plants are killed instantly by frost or at temperature below 4°C during severe winter.