



Underutilized fruit *Manilkara hexandra* (Khirni)

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Botanical name: *Manilkara hexandra* (Roxb.) Dubard, Syn. *Mimusops indica* A. DC.

Common name: Khirni, Ryan, Raina

Family: Sapotaceae

Origin and distribution : *M. hexandra* is

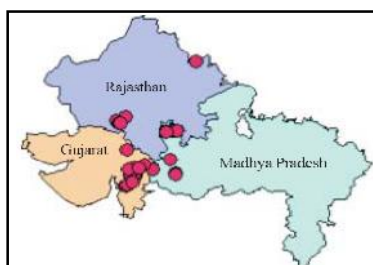


Fig. 1 : Diversity of khirni in Rajasthan, Gujarat and Madhya Pradesh

indigenous to India, found wild in the forests of South India, North-central India, parts of Gujarat and Rajasthan. In India this species is generally cultivated near villages, backyards and homestead gardens in the parts of Madhya

Pradesh, Gujarat, Rajasthan and Vidharbha region of Maharashtra and also found as natural wild populations.

General description : The tree is medium to large size attaining 5-60 ft. height with an erect trunk, evergreen with spreading growth habit forming a large shady head. Leaves coriaceous, shining, glabrous, blade 2-4 inches long,



Fig. 2 : A tree of khirni

obovate-oblong obtuse, petiole upto 1 inch long. Flowers whitish, in axillary fascicles of 3-6 flowers, peduncles shorter than petioles. It bears oval, sweet edible berry fruits with one or more seeds. Tree is well adapted to arid and

semi-arid conditions and can tolerate drought conditions. Flowering in the month of October-November and fruit setting during April-May. It is highly heterozygous and as such seedlings exhibit a wide range of variations, which aids in the selection of the superior desirable genotypes. Vast genetic variability in tree shape, size and canopy is existing in India. This tree is commonly used as commercial rootstock for sapota.

Propagation: The tree is generally propagated by seeds.

Recently vegetative propagation methods have also been attempted using softwood grafting and veneer grafting with 75 per cent success. Bed grafting is also being attempted for vegetative propagation of trees by some private nurseries in Gujarat to supply quality planting material to farmers. Work on developing suitable vegetative propagation methods for multiplication of some elite selections is in progress at CHES (CIAH), Godhra and CISH, Lucknow.

Cultivars/selections: Due to cross pollination and predominance of seed propagation over a long period of time, it gives immense opportunity to locate elite trees having horticultural traits. In spite of the fact that khirni can withstand adverse climatic conditions and be grown in various types of soil, no attempts to improve its varietal wealth have been made under semi arid regions.

Important uses : Fruits and bark of this tree species have economical value as mature fresh fruits are very sweet and eaten raw as well as after drying and bark is used for several medicinal purposes. The seeds contain approximately 25 per cent oil which is used for cooking purposes. The fruit is good source of iron, sugars, minerals, protein and carbohydrate etc. It is commercially used as a rootstock for vegetative propagation of sapota in different parts of the country. In the tribal area of Rajasthan, Gujarat and Madhya Pradesh this tree plays very important role in the socio-economy and livelihood security of small and landless farmers. Tribals in these villages are collecting fruits from these natural wild trees and selling in the nearby market at the cost of Rs. 30-40/- per kg and each tree provides fruits worth of Rs. 500-2,000/- to a tribal family, which is a substantial support to them. Besides fresh fruits are consumed by whole family which provides good nutritional support especially the requirement of Vitamin A is fulfilled in the children. These fruits being very rich in vitamin A (675 IU) work as a Vitamin A capsules for them.

Genetic resources management : Khirni trees have been found to be concentrated in the specific areas forming a population of different sizes. Genetic variability for trees size, shape, fruiting behaviour, fruiting time, fruit shape,



(a) Developing fruits of khirni

(b) Ripe fruits

Fig. 3 (a and b): Khirni bears small 1-2 seeded fruits which turn yellow at maturity. The fruits are 1x1.5 cm and round to ellipsoid in shape

size, taste etc. is found in Ratlam district of Madhya Pradesh, Panchmahal, Dahod and Sambarkanta district of Gujarat, Neemach district (Rampura area) and Dhar district (Mandu area) of Madhya Pradesh and Sirohi district of Rajasthan.

Conservation: Some of the elite accessions collected from Panchmahal district of Gujarat has been established

at CHES (CIAH), Godhra besides this some collections are being maintained at CISH, Lucknow. As far as conservation in the genebank is concerned diversity collected at NBPGR has been conserved in the cryogenebank at NBPGR through seeds.

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