M B Noor Mohamed, A K Shukla,
A Keerthika, Dipak Kumar Gupta,
B L Jangid, P K Roy and P L Regar

# Cultivating henna in arid and semi-arid Rajasthan

**The cultivation of henna is profitable under low rainfall conditions. Due to its drought hardiness, it can be cultivated on land that are drought prone, marginal or unsuitable for arable cropping to give assured economic return at low cost investment. The production of leaves starts third year onwards and continues for the next 15-30 years. Thus, a profit of ₹ 12,450 per hectare on an average is earned.**

HENNA or mehndi (*Lawsonia inermis*) is a perennial shrub belonging to family Lythraceae. It is cultivated as a commercial dye crop possessing natural dyeing properties and are used for hair dyeing and for staining of palm, feet and other body parts since times immemorial. In India, it occupies about 40,000 ha area. Out of which, 35,000 ha alone is in Pali district (Sojat and adjoining tehsils). Around 90% of total production of henna dry leaves is produced in Pali district of Rajasthan and Sojat is only center for its processing and trading in India. It is a hardy shrub capable of growing under diverse soil and climatic conditions. It thrives well in deep, fine sandy or medium textured well-drained soil and neutral to moderately alkaline (pH 7.7-9.9) soil is considered best for its cultivation. It tolerates moderate salinity of 8 to 12 dS/cm in subsoil.

### Variability in Henna

There are two botanical varieties of henna, viz. *alba* with pale or light-yellow petals, and *rubra* with rose (red) petals and light green sepals. However, in semi-arid regions of Rajasthan, yellow flowered henna is cultivated as dye crop perhaps due to better expression of leaf dye under such environment. There are two distinct phenotypic variants or ecotypes that have been observed among yellow flowered henna in Rajasthan. They are locally called *desi* and *muraliya* (also *muraili, mureli, mooli*) types.

***Muraliya type:*** It has woody canopy with small leaves of distinctly greyish green colour and hard pointed branchlets. It regenerates into tall, erect and lax canopied plants having conspicuous terminal clusters of small branchlets, small and thick greyish green leaves. The muraliya plants bears late flowering after several years.

***Desi type:*** Generally *desi* type plants are favoured for the large-scale cultivation. Because it has big leaves, less woody stem and easy to harvest compared to muraliya types. It has higher leaf yield potential and is easier to handle due to the absence of pointed thorn-like branchlets.

### VARIABILITY IN HENNA

There are no released varieties of henna at present and only populations raised from seeds are existing at farmers field in India. However, morphological variations and difference in yield and quality exists in different accessions. There is ample amount of variation in populations of henna in fields. Henna is one of the few perennial shrubs under cultivation in arid and semi-arid region. The presence of natural variability available in field indicates scope of selection for improvement. Among 34 accessions collected from Sojat (23) and Marwar Junction (11), there is considerable and significant variations in leaf and yield traits. Among accessions, Sojat-8 and Sojat-

Henna plants

Henna leaves

Henna flowers

Henna berries