

On-farm conservation for traditional mango varieties

Mangoes are plentiful in India, with over a thousand varieties growing in tropical and sub-tropical areas. The majority of these varieties are seedlings that have been passed down from generation to generation as heirloom varieties. Enjoying a specific aroma, taste, maturity time, and use on special occasions are all reasons why farmers grow these varieties. On-farm conservation would not only help farmers conserve their variety, but it would also help them earn profit by registering them as farmer's varieties.

FOR a variety of reasons, heirloom varieties have been conserved in the orchards. Farmers play an important role in maintenance of non-commercial mango varieties. They experiment with new seedlings and adopt them if they prove to be superior to traditional varieties or landraces. Local mango varieties are advantageous at some places because they yield more, are more resistant to pest infestations, and are more tolerant to abiotic stresses than cultivars. Farmers, on the other hand, have a number of uses for these varieties.

In important mango growing areas of the country, growing multiple varieties in an orchard was an old tradition. These traditional orchards could conserve many rare and important varieties. These multi-varietal orchards helped farmers to increase their income, reduce risks (both the yield and price risks) and secure their livelihoods. Other advantages include extended harvesting season, reduced harvest risks by improving pollination, and reduced crop failure chances of one or two varieties in the orchard.

Need for conservation

About six decades back, in place of grafted plants, people planted new orchards by even using seedling plants but it is a rarity in present days. For few large land owners, space for seedlings was not a constraint and trees were allowed to grow, flower and fruit. Majority of the mango varieties came into world because of this process. New varieties developed as nature's gift and people were

interested in selection and maintaining them. These did not have much commercial value rather owning them due to some unique character was considered as matter of pride.

Although majority of the varieties have disappeared but even then community efforts can conserve the existing ones. Many of the varieties survived in the orchards because of their value for making pickles but gradually they also vanished as their commercial value was not exploited by the owners. Serious threat to the mango varieties warrants efforts for conservation as these are important sources of genes for future breeding programmes.

Rare varieties supporting livelihood

In the wholesale market, traditional varieties are not well respected, and farmers are demoralized as a result of receiving too low price. In some big city colonies, however, these rare varieties are sold at very high price. Mango connoisseurs are willing to pay a premium price for these varieties. Farmers are putting forth extra marketing efforts in order to maximize their profits. Seedlings and local varieties are supporting the livelihood in several tribal areas where commercial varieties are not common. The farmers sell fruits on roadside stalls and products made from these rare varieties. The desire to consume varieties other than commercial ones is gradually growing among city dwellers. Farmers may be able to get a better price if rare mangoes are sold in a more organised manner.



SCMD farmers displaying the mango diversity



SCMD members organized diversity show in Kasmandi Kalan

Community based efforts for conservation

Collective and community efforts can support the drive to save mango varieties in a big way. ICAR-CISH, with the help of farmers identified mango varieties in the orchards, and catalogued and popularized them for making them important. Farmers were educated for making less known varieties important and selling even at a better price than Dashehari. Collective marketing of rare varieties by the farmers was demonstrated as a potential tool. Many expert farmers marketed non-commercial mango varieties in posh areas of cities. Their experiences in marketing were demonstrated to other farmers who were normally dumping unique mangoes in wholesale market at very low price.

On-farm conservation of Malihabadi mango varieties was initiated by CISH with the development of a community based organization “Aam Vividhta Sanrakshchan Samiti” (Mango Diversity Conservation Society). Community farmers identified 100 varieties which require on-farm conservation on priority. The Society for Conservation of Mango Diversity (SCMD), empowered the community farmers to appreciate market value and uniqueness of mango diversity as well as on-farm conservation and effective measures for protecting farmers’ variety of the area.

Thousands of grafted plants were made in the community nurseries for planting in the orchards. Many farmers came forward to plant these varieties as they could understand the value of unique varieties. The varieties with potential for pickle making were identified and a community based evaluation was made to make the farmers understand about the selection of pickle varieties.

Important role of custodian farmers

Mango custodian farmers are farmers who maintain, adapt, and promote varieties and related knowledge over time and space in their orchards and are recognized locally for their efforts. Farmers have played a key role in the development of mango varieties and practice on-farm conservation of traditional non-commercial varieties as custodian farmers. In India, local farmers, nurserymen and landlord contributed towards evolving and conserving the varietal diversity. Various motivational factors play role in prompting the custodian farmers for conservation of mango varieties.

Diversity fairs promote conservation

Mango mela, festival or exhibitions are common and

provide platform where farmers can showcase their unique varieties and popularize them in different cities of the country. With the help of CBO many good practices to save these varieties were implemented. Mango Festivals are important events in the country and the participants from other states also participate in the event. At many places more than a lakh people may visit to see varieties in this unique event for which not only farmers but all mango lovers wait, for enjoying the event. It is rightly said that it is a festival where not only mango fruits are displayed but several value added products are also sold made from the king of fruits.



SCMD was awarded Plant Community Genome Saviour Award

Mango diversity shows have their own importance and especially for people who conserve rare mango varieties and wait for this event because they can exhibit the heritage available in their orchards. Many farmers bring their fruits to sell in fair and the urban masses happily purchase these excellent uncommon mangoes at a premium price, many times more than commercial varieties like Dashehari. At this event, mango lovers help each other in exchanging rare mango variety plants. Mango traders also don't miss this event because they get contract renewed with the progressive farmers who have capacity to produce and supply high quality mangoes for getting premium price in domestic and export markets.

ICAR-CISH organized a number of diversity shows where several hundred mango varieties were displayed. This event is organised to motivate those who are continuously making effort to augment mango varieties in orchards. Institute made efforts to educate people for conserving varieties in their own orchard by following the

principle of "one variety with one farmer" which will make conservation of thousands of mango varieties possible. Collective effort of the community for the conservation of the varieties is the only way how on-farm conservation of rare varieties would be achieved.

Strategy for conservation

Malihabad, known for the hundreds of mango varieties is losing varietal wealth developed during 200 years because of urbanization, commercial varieties like Dashehari and declining enthusiasm for rare mangoes. During old days, hundreds of mango varieties were cultivated for passion and mostly the fruits were exchanged with friends or distributed amongst relatives without much commerce. Many a times, mango feasts (dawat) organized by nawabs and big landlords saved a number of varieties in the orchards.

The collective efforts by the communities can help in saving the invaluable mango varieties by taking up a responsibility of planting one variety by one farmer thereby conserving thousands of varieties with limited resources. The conservation drive can also be promoted by consuming rare varieties by the masses and provide market place in the city. It will make the availability easy and provide good returns to farmers.

Constraints

Sustainable on-farm conservation is not very easy because of livelihood associated with the farming community. Farmers are interested in planting grafted varieties which have high market value. They want to

utilise land not only for mango but for other high return crops. Old orchards have been sold out, thus more than a century old trees have disappeared.

Descendants of big orchards with multiple varieties live in cities and they don't have much interest in owning varieties. Presently, the scenario has totally changed as mango is being cultivated both by economically rich and resource poor people. For majority, livelihood is mainly supported by the income from the mango orchard. With the increasing cost of land, farmers are interested in selling the cultivated land than growing unique mango varieties.

SUMMARY

Mango varieties are abundant in India, as they grow in tropical and sub-tropical climates and come in over a thousand varieties. Traditional mango varieties have a wide range of unique flavours, nutritional and medicinal properties. A large number of old mango varieties are being conserved by custodian farmers. Their efforts will demonstrate on-farm conservation of mango diversity. Non-commercial mango varieties grown by farmers are critical for conservation. Traditional varieties help farmers' livelihoods in areas where commercial varieties are scarce. Mango festivals can play an important role in demonstrating diversity.

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