Pick of cashew varieties

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Systematic cultivation of cashew started in India only very recently. And even today over 95 per cent of the cashew collected and processed for world market is picked from self sown cashew tree.

The highest figure reported for world production was 4,91,000 tonnes in 1974 when India accounted for over 16 per cent of this production. With only 16 per cent share in production, India accounts for over 60 per cent of the processed kernel in the world market. This is because India imports raw nuts from East Africa to meet the requirements of the processing factories. The export of cashew kernel from India has grown at the rate of 4.1 per cent per annum during the period 1946-78. The world export of cashew kernel has grown at the rate of 6.6 per cent a year.

However, the component of indigenous production in export trade has grown comparatively at a slow rate of 3.0 per cent per annum during the same period. It is, therefore, evident that Indian export has been growing faster than the Indian production of raw nuts. Obviously, this is not a very healthy growth. For no country can

Gold grows on a tree

expect to sustain its industry for ever on imported raw material. Moreover, in major producing countries, processing capacities are being augmented year after year and necessarily India has to prepare itself to reduced availability of raw cashewnuts and to face the very same sources of supplies of raw nuts as competitors for cashew kernel in world market.

The processing capacity built up in India is estimated at about 5 lakh tonnes. Our production of raw nut is only about 1.5 lakh tonnes, thus leaving a gap of 3.5 lakh tonnes. Poor genetic stock and lack of maintenance are the two major factors that contributed to the low yield.

While immediate increase in yield can be achieved by adopting improved management practices including fertilizer application and plant protection measures, the stability and progressive increase in production is possible only by adopting integrated production programmes. Due to the reasons stated earlier the production potential of a high percentage of cashew trees in this country is very low. Reports from Tanzania and other cashew growing countries show that less than one per cent of the trees in a plantation are high yielders with good quality nuts. In India also the situation is very much similar. Our programmes to increase the cashew production should, therefore, include upgrading of existing plantations by selective budding or side grafting and planting new areas with high yielding selections and hybrids and adoption of management practices.

Research programmes for upgrading the planting materials in cashew has been undertaken under the All India Co-ordinated Spices and Cashewnut Improvement Project from the beginning. For evolving high yielding varieties extensive germplasm assemblage available at different co-ordinating centres were evaluated for yield and quality of nuts and apple.

SOME WORTHY SELECTIONS

Intensity of branching and flowering, percentage of perfect flowers and fruit set, number of fruits per panicle, size of the nut and shelling percentage, size of the apple, quality and quantity of juice content in the apple are the characters considered for selection of an elite tree. Based on the above criteria, 12 selections from Bapatla, four each from Mannuthy, Vengurla and Vridhachalam have been identified as high yielders.

For identification of elite trees for seed collection, based on progeny performance, a comparative yield trial with seedling progenies of 16 promising high yielders have been planted during 1972-73 at different co-ordinating centres. Preliminary evaluation based on progeny performance shows that progenies of Vridhachalam types M 10/4, M 6/1, M 14/3 and M76/1 and those of one type from Anakkayam BLA 139 performed better at all the centres. Under good management, the yield of the progenies of the above types was over 10 kg/tree in the 5th year of their orchard life. The size and quality of the apple were also good. Thousands of seedling progenies of Selection No. 1, 40, 56, 119, 121, 256, 273 and 274 of Cashew Research Station, Bapatla have been planted in compact family blocks in the Forest Plantations of Andhra Pradesh. These are being evaluated and the seeds from the promising lines would become available for large scale distribution.

HIGH YIELDING HYBRIDS

Breeding programmes undertaken at Cashew Research Station, Vengurla, Bapatla and Anakkayam have helped to evolve high yielding hybrids. Two such hybrids - 2/11 and 2/12 - are crosses between Tree No. 1 and T. No. 273 of Cashew Research Station, Bapatla.

The average yield of hybrid 2/11 for the last five years was 16.2 kg. The nuts are medium sized and the protein content is estimated at 18 per cent. The percentage of bisexual flowers is 13.2 and fruit set is about 8 per panicle. Shelling percentage is 27.5. Apple is medium, yellow in colour and juice content about 68 per cent.

The average yield of hybrid 2/12 is 18.2 kg with medium sized nuts weighing

A view of a well-maintained cashew plantation near Kasargod in Kerala. Several schemes are underway to plant new orchards with superior plant material

about 4 gm and shelling percentage 25.7. The percentage of bisexual flowers is 6.9 with a fruit set of 8-10 fruits per panicle. Protein content is 19.78 per cent.

H-3-17 and H-3-19 are the hybrids between Tree No. 30 and Brazilian Type No. 18 evolved at Cashew Research Station, Anakkayam. H-3-17 has 13.3 per cent perfect flowers and the average yield is 16 kg with medium sized nuts weighing 6.5 gm and shelling percentage of 26. Fruits are medium sized and of good quality. H-4-7 is a cross between Tree No. 30A and Brazil 18. The average yield is 11.4 kg of medium sized nut with a shelling percentage of 25.3.

Hybrid No. 5 is a cross between Vengurla-1 and Veture-56. It has 24 per cent perfect flowers. The yield is 17.2 kg by 8th year of orchard life. The nuts are medium to big size and shelling percentage is 27.5. The fruit is small and juicy.

H-11 and H-19 are the progenies of crosses between Midnapur red and Veture-56. H-11 has 31 per cent perfect flowers and an yield of 23.2 kg at the 8th year. The nuts are medium weighing 7 gm and shelling percentage is 30.7. The fruits are pinkish yellow and juicy. H-19 has 36 per cent perfect flowers. The yield is 23.3 kg of medium sized nuts weighing 6.3 gm and shelling percentage is 32.

H-24 is a cross between Ansur Early and Mysore Koyekar 1/61. It has high percentage of perfect flowers with an yield of 23 kg in the 5th year of orchard life. The nuts are small sized and shelling percentage is 31.

Hybrid No. 25 and 26 are the crosses between Ansur Early and Mysore Koyekar 1/61. H-25 has 27.2 shelling percentage and 74.3 per cent juice content. The nuts are small sized. H-26 has the highest percentage of juice content (86.8 per cent) and shelling percentage is 30.7 with small sized nuts.

H-74 is a cross between Midnapur Red and Ansur-1. The shelling percentage is 36 and juice content is 67 per cent and the nuts are medium sized.

The fact that cashew is cross-pollinated and can be vegetatively propagated suggest that advance in yield could be made by exploiting the hybrid vigour. These high yielding selections/hybrids are being multiplied vegetatively and clonal nurseries are being maintained at different centres for distribution to the farmer community.