

Some Promising Cashew Selections and Hybrids in Andhra Pradesh

BY

S. Nagabhushanam, T. B. Dasaradhi and P. Venkata Rao

Introduction

An area of nearly twenty nine thousand hectares of coastal sandy soils and red soils in Andhra Pradesh has been covered by cashew plantations of which Srikakulam, East and West Godavari, Vizag and Nellore districts occupy more than three fourths of the total area. The yield per hectare is however, not good enough due to (a) poor stocking (b) inherently poor yielders and (c) neglect in maintenance.

In view of the need for stepping up production and maintain our premier position in the international market we have to remedy the defects in an organized effort, both in terms of immediate steps and long range programme for planting new areas.

The research work carried out at Cashew Research Station, Bapatla in Andhra Pradesh during the past two decades has succeeded in identification of promising selections and hybrids of economic importance which would offer material for planting up new areas. This may help to improve the future orchards.

The description of these promising selections and hybrids and their performance are presented in this paper.

Materials and methods

As a result of extensive survey carried out in cashew growing districts in and outside the state, a collection of

about 400 types of cashew has been built up in the fifties and individual performance of each tree in respect of their growth, mode of flowering, percentage of bisexual flowers, nut size, size of apple and its colour, juice content, percentage of soluble solids and yield has been recorded.

Apart from the collections made nearly 200 hybrid progenies have also been evolved by crossing different types with a set objective of enhancing yield and size. On vigorous screening of the available material, nine selections and two hybrids have been adjudged as promising and the description of these types is detailed below

Selections

T.1: This is an intensively branching productive tree with moderate spread and height. The young leaves of this type have a characteristic mango smell. About 200 plants of this type can be planted in an hectare adopting a spacing of 7 meters in the square system. It has about 10% perfect flowers and is a prolific yielder.

Apple : Medium size, yellow and conical. Juice content: 64 percent. Total soluble solids: 15.6 percent

Nut : Medium size weighing about 5 gms. Shelling percentage: 25

Yield: Maximum yield recorded; 56.9 kg. of nuts in 1975 at an approximate

age of 40. Average yield (1971-75): 42 kg.

This selection is suitable for extensive cultivation under East Coast conditions.

T.56 : This is a shapely vigorous growing tree with a moderate spread and height. The tender leaves when crushed emit a characteristic mango smell and are Algerian Red in colour at the time of emergence. This has comparatively a short flowering phase with nearly 8 per cent of bisexual flowers.

Apple : Medium size, yellow and pyriform. Juice content upto 74 per cent. Total soluble solids: 14 per cent.

Nut : Weighs around 6 gms. Shelling percentage - 26.7

Yield : Maximum yield recorded - 74.1 kg. of nuts in 1972 at an approximate age of 40. Average yield (1971-75) - 57.1 kg.

Being vigorous and spreading, wider spacing upto 10 metres is required.

T.39 : The tree is vigorous with intensive branching. The tender leaves are Mandarin Red with an odd turpentine smell.

It has a moderate flowering phase with nearly 13 per cent of bisexual flowers.

Apple : Medium, yellow and cylindrical. Juice content upto 60 per cent. Total soluble solids - 8 per cent.

Nut : Weighs around 6.8 gms. Shelling percentage - 24

Yield : Maximum yield recorded: 52.9 kg. of nuts in 1972 at an age of

nearly 40. Average yield (1971-75) - 34.8 kg.

T.273 : This is a compact tree with intensive branching but with sparse leaves. The tender leaves are Algerian Red with turpentine smell. It has a medium flowering phase producing around 9 per cent of bisexual flowers.

Apple : Medium, yellow and conical. Juice content—63 per cent. Total soluble solids — 15 per cent.

Nut ; Small in size weighing around 4.5 gms. Shelling percentage — 26.7

Yield : Maximum yield recorded—30.4kg. in 1974 at an approximate age of 40. Average yield (1971 - 75) —22 kg.

T.40 : A compact tree with vigorous growing habit. The new flush is Mandarin Red with mango flavour. It has a medium flowering phase producing around 5 per cent of bisexual flowers.

Apple : Medium, yellow and conical. Juice content—69 per cent. Total soluble solids—16 per cent.

Nut : Medium size weighing around 5 gms and shelling percentage—27

Yield : Maximum yield recorded—34.7kg in 1973 at an approximate age of 40. Average yield - 20 kg.

T. 135 This tree has intensive branching with moderate vigour. The new flush is Egyptian Red in colour with a characteristic mango flavour. It has a medium flowering phase with nearly 12 per cent of bisexual flowers.

Apple : Medium yellow and conical. Juice content - 60 per cent.

Nut : Small in size weighing about 4.5 gms. Shelling percentage - 26

Yield : Maximum yield recorded - 30.2 kg. of nuts in 1974 at an age of 40. Average yield - 18.9 kg.

3/3 Simachalam

A moderate sized tree with normal vigour. New flush is Egyptian Red in colour with a characteristic mango flavour. This is a late bearer with nearly 15 per cent bisexual flowers.

Apple : Big, pale yellow and conical. Juice content - 67 percent. Total soluble solids - 19 percent

Nut : Medium size weighing around 5 gms. Shelling percentage - 25

Yield : Maximum yield recorded - 21.3 kg. of nuts in 1974 at the age of 16. Present average yield - 14.6 Kg.

The yield is likely to increase further as the tree grows.

9/8 Epurupalem

This is a vigorous growing tree. Young flush is Egyptian Red in colour with characteristic mango flavour. This has a long flowering phase producing about 8 per cent of bisexual flowers.

Apple : Small, yellow and conical. Juice Content - 58 percent.

Yield ; Maximum yield recorded - 12.6 kg. in 1974 at the age of 16. Present average yield - 9.4 Kg.

The yield is likely to increase further as the tree grows.

9/3 Ambugam

A moderate sized tree with intensive branching. Young flush is Algerian Red

with turpentine flavour. This tree has a medium flowering phase with ten per cent perfect flowers.

Apple : Medium, yellow and conical to cylindrical in shape. Juice content - 50 percent.

Nut : Medium size weighing 5.5 gms. shelling percentage - 25

Yield : Maximum yield recorded - 29.4 kg. of nuts in 1975 at the age of 18. Present average yield 18.1 kg.

The yield is likely to increase further as the tree grows.

Hybrids

H-2/11 : This hybrid is designed for improving the size of the nut of T. 273 which is small by crossing it with T. 1 Both the parents involved in this cross are high yielders.

The hybrid is only 18 years old with intensive branching habit. The young flush is Turpentine Red with a peculiar mango flavour.

The tree has medium flowering phase producing nearly 13 per cent of bisexual flowers.

Apple : Medium, yellow and conical. Juice content - 57 percent. Total soluble solids - 15 percent.

Nut : Medium size weighing around 5 gms. Shelling percentage - 26.

Yield : Maximum yield recorded - 16.4 kg. of nuts in 1975 at the age of 18. Present average yield - 11.9kg.

H-2/12 This is another hybrid progeny obtained as a result of crossing T-1x T. 273.

The young flush is Algerian Red with a peculiar turpentine smell.

Flowering phase medium producing around 8 per cent of bisexual flowers.

Apple: Small, yellow and conical. Juice content - 67 percent. Total soluble solids - 17 percent.

Nut: Weighs around 4 gms. Shelling percentage - 26.

Yield: Maximum yield recorded - 26.6 kg. of nuts in 1975. Present average yield - 14.5 kg.

Results and discussion

The two hybrids H-2/11 and H-2/12 and nine mother trees can be recommended for large scale planting in the East Coast. Some of these have established well in other states and in West Coast also.

To ensure true to type behaviour of mother trees, it is necessary that these trees should be propagated by adopting

insitu grafting on six month old seedlings by veneer grafting during monsoon months.

A good quantity of seed of these promising bearers has already been supplied to different developmental agencies and large scale planting by the forest department in Andhra Pradesh and in the All India Co-ordinated Project trials of I. C. A. R. at different centres had also be taken up.

Acknowledgement

The authors are thankful to all those research workers associated with the research work at Cashew Research Station, Bapatla, (A. P.) for their contribution in building up the data and observations recorded.

S. Nagabhushanam M. Sc. (Ag.): Horticulturist, CPCRI Regional Station, Vittal, T. B. Dasaradhi: Horticulturist, A. P. Agricultural University, Hyderabad, P. Venkata Rao, Research Assistant, Cashew Research Station, Bapatla

(Continued from page 7)

CAGE is also studying the possibility of blending almonds in foods popular with Japanese consumers, but that are largely imported.

One area with potential is the frozen food industry—most importantly frozen fish whose flavor can be improved by the addition of sliced almonds. The Japanese depend on fish for more than one-fifth of their protein intake.

Koga, a popular speaker at school nutrition seminars, said school lunch

programs in several prefectures (states) are using almonds as snacks, or as diced almonds sprinkled on salads or other foods. A teacher said that 40 percent of the youngsters normally refuse to eat cheese but will if it contains almonds.

California exports about 55 percent of its almond crop. West Germany is the leading market, followed by Japan. Koga wants to see Japan the leading market.

[Reproduced from Foreign Agriculture, USA]