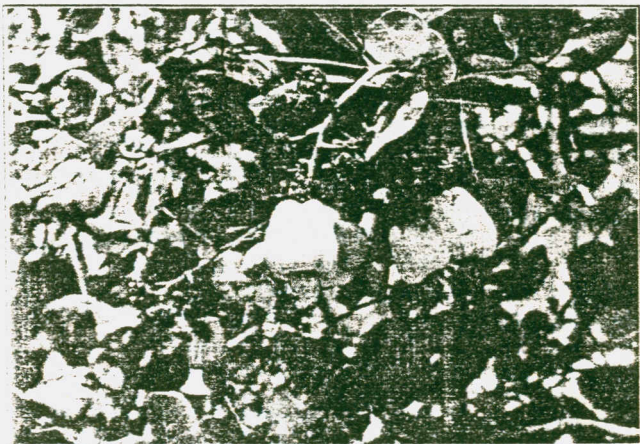


Extension Folder No. 9
1996

IMPROVED CULTURAL PRACTICES FOR CASHEW IN GOA



भारत सरकार
ICAR

ICAR Research Complex for Goa

ELA, OLD GOA - 403 402.

Improved cultural practices for cashew

The soil and climatic conditions of Goa are ideally suited for cashew cultivation. Although cashew can be grown on wide range of soils, it suffers in the stagnant soils. The average yield of cashew in Goa is less than 2 kg nuts/tree/year. This can be easily increased to 10 kg nuts/tree/year, by adopting high yielding varieties and improved package of practices.

IMPROVED VARIETIES : Till recently, there were no distinct high yielding varieties of cashew. Today several high yielding varieties of cashew are available which are capable of giving 15 to 25 kg of raw nuts per tree per year as against the average yield of about 2 kg per tree per year obtained from local cashew trees in Goa. Therefore, planting of high yielding varieties is must for attaining high productivity levels. Among several varieties of cashew released so far, following varieties are observed to be performing well under Goa conditions.

VENGURLA-1 : This variety gives an average yield of 15 kg nuts per tree per year at the 10th year. The size of the nut is medium (160 nuts/kg) with shelling percentage of 31. The size of the apple is medium with yellow colour.

VENGURLA-4 : This variety yields about 20 kg nuts per tree per year at 12th year. The size of the nut is medium (140 nuts/kg) with shelling percentage of 31. The apple is medium in size with red colour.

VENGURLA-6 : This variety is recently released for cultivation. It performs well under Vengurla condition. However, its performance is not confirmed under Goa conditions.

In addition to the above, ICAR Research Complex has surveyed and selected several high yielding selections of local cashew varieties. Balli-2 has been found to be very promising among these varieties. This variety will be released for cultivation shortly.

PLANTING : Clear the land from bushes and other trees well before the premonsoon showers. As soon as the premonsoon showers are received, dig pits of 60 x 60 x 60 cm size, at a distance of 8 x 8m. Fill the pit with top soil, half kilo sterameal, half kilo Gasfaphos/Mussorriephos and one basket of compost or farm yard manure (FYM). Add 100 g of Endosulfan dust or half kilo neem cake in the pit to control the soil borne pests. Immediately after the onset of monsoon, plant the graft in the centre of the pit and stake it. The grafted joint should remain 3 to 4 cm above ground level. Planting should be completed before June end, to get full advantage of prevailing monsoon rains. Mulch the graft with green leaves immediately after planting. Mulching helps in conserving soil moisture, suppressing weeds, keeping root zone cool and finally adds organic matter to the soil.

AFTERCARE : Cashew is mostly grown on hill slopes. Soil erosion and leaching of plant nutrients are generally observed under such situation. To overcome this problem, preparation of terraces above the graft and opening of catch pits are essential. Contour trenches 50 cm in breadth and 30-50 cm in depth, two metres away from the grafts on the upper side, may be dug for conserving soil and water on the slope land.

Any sprout arising below the graft union should be removed as and when it appears. Flowers appearing in the first two years should be removed in order to encourage the good vegetative growth in the initial stages.

MANURING : Cashew is usually grown in poor soils but responds well to fertilization. A fertilizer dose of 500 g N, 125 g of P_2O_5 and 125 g of K_2O per tree per year is recommended for Goa. The details of manurial requirement for different age groups are given in the table 1. Fertilizers may be applied during the month of August.

For applying fertilizers, basins should be opened leaving 25 cm from the trunk, 10-15 cm deep and to a radius of 1-2 m, depending upon the canopy of the tree. Fill the basins with the green leaves and add the recommended quantity of chemical fertilizers and cover it with soil.

Table 1. Manurial requirements of cashew in Goa

Age of the tree (years)	N (g)	P_2O_5 (g)	K_2O (g)	Urea (kg)	Mussorie Phosphate (kg)	Muriate of Potash (kg)
One	100	80	--	0.2	0.3	--
Two	200	80	60	0.4	0.4	0.10
Three	300	120	120	0.8	0.6	0.20
Four & above	500	125	125	1.0	0.7	0.25

IRRIGATION AND DRAINAGE : Cashew is a rainfed crop. However, it responds well to irrigation. About 200 lit water/tree during Jan-March once in 15 days can double cashew yield. During the first year of planting, provide irrigation with 15 litres of water/plant, once in 15 days, up to 4 years. After 4 years, irrigation should be given to grafts during summer months. If water source is not available nearby, following precautions are needed to be taken for better survival of grafts :

- Plant the grafts at the onset of monsoon.
- Plant only 9 to 12 month old grafts.
- Mulch the graft regularly during June, August and October.
- Dig the trenches for soil and water conservation.

Cashew cannot withstand water stagnation and therefore it should be ensured that there is proper drainage.

WEEDING : Cashew gardens should be kept free from weeds as they compete for nutrients and moisture. Growing of cover crop like dhaincha in the month of June, reduces weed growth to greater extent. Weeding can be done manually or by spraying weedicides. Since labour is costly and scarce in Goa, it is advisable to go for chemical weed management. Spray Gramaxone @ 50 ml in 10 litres of water after emergence of weeds. Gramaxone being nonselective weedicide should be taken to see that the weedicide does not fall on the leaves of cashew trees at the time of spraying.

INTERCROPPING : Since cashew is grown on hill slopes, most of the plantations are rainfed, intercrops can be grown only in rainy season. It is advisable to grow leguminous crops like cowpea, mung, urid, tur and groundnut, in rotation with vegetables like bhendi, amaranthus, chillies, cucurbit

which will fetch some income to the farmer during the early period of plantation and an additional income thereafter. Ragi, tapioca and local varieties of pineapple can also be grown successfully as intercrops in cashew orchards.

TRAINING AND PRUNING : Cashew tree exudes gum resin from the cut ends and therefore regular pruning is not advisable. In the initial stages, training may be done for giving proper shape to the plant. In the adult plantation, the dried and criss cross branches may be pruned with minimum damage to the plant in alternate years. Training and pruning help the plant to take good shape and make the cultural operations easy. It is advisable to remove all branches up to a height of one metre from the base during initial years, to keep a clear straight trunk and for easy cultural operations.

HARVESTING AND ECONOMICS : Fully matured apples are allowed to drop down naturally with the attached nuts. Nuts are separated from the apples and sundried for 1-2 days and stored before selling. Juice should be extracted from the apple within 24 hours before the rotting sets in.

An amount of Rs. 4,000/- is required to maintain one hectare of adult cashew plantation. On an average, a yield of 1.6 tonnes can be obtained from one hectare cashew plantation, which would fetch Rs. 56,000/- by way of sale of nuts alone. The income realised by sale of apples/juice would amply meet the cost of cultivation for one hectare.

For further details, farmers may contact the Director, ICAR Research Complex for Goa, Old Goa-403 402.

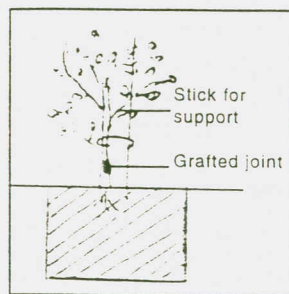
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Published by : **D. G. Dhandar
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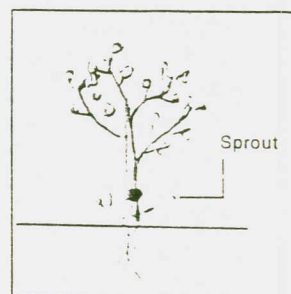
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Fig. 1



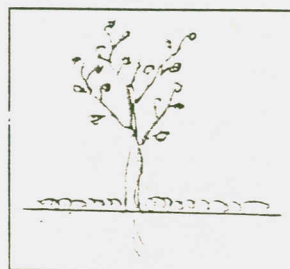
Plant the graft this way.

Fig. 2



Remove the sprouts emerging from roots stock

Fig. 3.



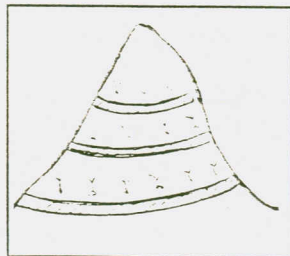
Mulch the graft regularly

Fig. 4



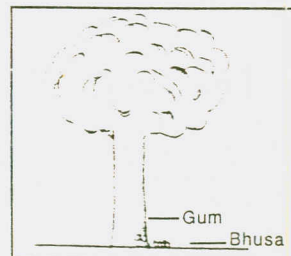
Remove flowers during first two years.

Fig. 5.



Dig contour trenches for soil and water conservation.

Fig. 6



Control stem borer at this stage