

FERTILISING CASHEW FOR HIGHER YIELDS

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IMPROVING agro-techniques in cashew plantations has become urgent today, with the availability of high-yielding varieties, and better methods of vegetative propagation. Increasing productivity is an imperative in the context of the present crisis in cashew industry.

Cashew is grown over 420,000 ha in the country and the average yields in different states are estimated to vary from 140 to 1126 kg/ha or 0.80 to 6.49 kg/tree (Table 1).

It is well recognised at present that there exists a crisis in the cashewnut processing industry in the country because of the wide gap in the capacity of the processing factories and the low production within the country. This situation arose because we had a virtual monopoly in the processing of cashewnuts employing manual labour. We used to import raw nuts from African countries and export processed kernels until recently. Now that these countries have started mechanical processing, raw material import into the country has dwindled.

Thus an immediate doubling of the present production of 200,000 tonnes can only meet the present shortage in the processing industry for raw nuts. Were we to take into consideration the probable increase in demand for internal consumption, the scope for increased production with no fear of a fall in price of nuts or reduced returns to the farmer is limitless.

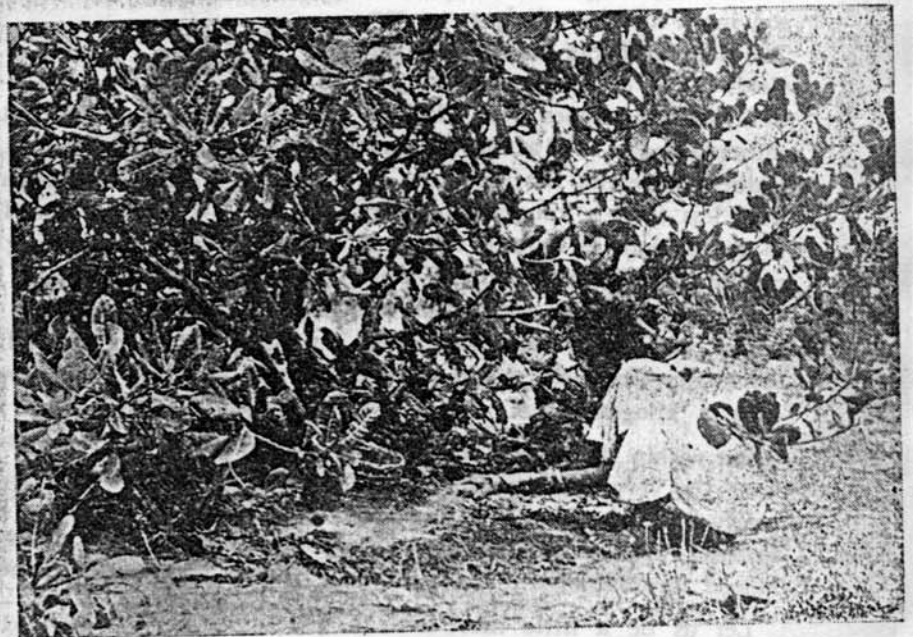
Increase in Productivity

Whatever the scope for the utilisation of higher production be, we

have only limited areas available for establishing new cashew plantations. Thus an increase in productivity is the only answer for the crisis in our cashew industry. Even when new plantations are to be established we should ensure higher yields than we realise at present to be certain that our efforts in this direction are worthwhile both in terms of delayed returns on the initial investment in new plantations and in terms of early returns on the initial investment in new plantations and in terms of regular returns on annual maintenance expenses.

There exists a view that cashew was introduced into the country as a soil-binding crop for the forest lands of the Western ghats. And it

was considered to be a crop for the waste lands or so-called marginal lands where no other crop would come up well. There was no intensified research effort on this crop until the early 1950s when the Indian Council of Agricultural Research sanctioned an *ad hoc* scheme for the establishment of a few cashew research stations in the erstwhile states of Travancore, Madras and Bombay. With increasing research efforts followed by critical analysis of yield gaps and constraints in production and productivity, there is a new awareness among the researchers, developmental agencies and the farmers that cashew can no longer be a neglected crop of the wastelands. With the identification of new areas



Manuring cashew trees

Indian Farming

for introduction of cashew and the availability of higher yielding hybrids and better methods of vegetative propagation, the need to improve upon existing agro-techniques is being realised.

Though we do not have any valid statistics on the use of fertilisers by cashew farmers, it is probably true that no fertiliser at all is applied by the majority of the existing farmers except by the Forest Departments of Andhra Pradesh, Goa, Maharashtra Tamil Nadu and Kerala and the Plantation Corporation of Kerala who own cashew Plantations. Thus it is only logical to conclude that there exists a great scope (1) to exploit the existing crop through better fertiliser application, and (2) to ensure early and higher returns from new plantations raised from superior planting materials, both seedling and clonal progenies.

Effect of Fertilization

However, skeptics have to be convinced and here is how we can. The data in Table 2 show how the yields of 162 cashew trees belonging to 58 different types from Maharashtra planted in 1957 at the Vengurla Cashew Research Station went up from less than a kilogram per tree to more than 4 kg/tree following regular fertiliser application. Until 1972, when fertiliser application was begun on 15 year-old trees, there was no sign that yields would average even a kilogram/tree.

But within three years after fertilisers the very same trees averaged nearly 4 kg nuts/tree ensuring that fertiliser application of cashew is indeed profitable.

Let us be a little more critical. If indeed fertiliser application is profitable could we not start it from the very beginning? The data presented in Table 3 show the yields of 157 F₁ hybrids planted at Vengurla in 1970, from the 3rd year onwards. In contrast to the unfertilised trees, these trees started yielding more than 4 kg by the fifth year!

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TABLE 1. AREA AND PRODUCTIVITY OF CASHEW IN DIFFERENT STATES OF INDIA

State	Area ('000 ha)	Annual Production ('000 tonnes)	Productivity	
			kg/ha	kg/tree*
Kerala	103	116	1126	6.49
Karnataka	96	36	375	2.14
Tamil Nadu	93	13	140	0.80
Goa, Andhra Pradesh, Orissa, Maharashtra	128	28	219	1.82
Total	420	193	460	2.62

(*Assuming 175 trees/ha)

TABLE 2. INCREASE IN YIELD OF 162 INITIALLY NEGLECTED CASHEW TREES BY FERTILISER APPLICATION AT VENGURLA

Year of Planting	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
	Unfertilised					Fertilised				
1957	0.186	0.346	0.541	0.526	0.948	0.813	1.27	2.87	3.860	4.020

TABLE 3. YIELD OF 157 REGULARLY FERTILISED HYBRID CASHEW TREES AT VENGURLA FROM THE THIRD YEAR

Year of Planting	Yield kg/tree			
	1973	1974	1975	1976
1970	0.360	1.056	4.277	5.678

TABLE 4. INCREASE IN YIELD OF CASHEW TREES BY FERTILISER APPLICATION. RESULTS OF MINIKIT TRIALS (P. 16, AICSCIP PROGRESS REPORT FOR 1976-77)

	Mannuthy	Vengurla	Bapatta	Vridhachalam	Vittal
	(kg/tree)				
Fertilised trees	3.4	0.5	6.1	1.9	1.5
Unfertilised trees	2.7	0.3	3.4	1.0	1.0

It is clear from these data that in the earlier 1957 plantings, yields of 4 kg/tree could have been obtained much earlier than the 19th year, had we started fertilising the trees from the very beginning instead of starting regular fertiliser application from the 15th year.

These data conclusively prove that the two hypothesis mentioned earlier are indeed true. We can quote further examples: Results from Package Programmes implemented in the states of Kerala, Andhra Pradesh, Tamil Nadu,

Maharashtra, Karnataka and Goa between 1970 and 1974 show that yield increases following regular application of 250 g N, 150 g P₂O₅ and 150 g K₂O/tree average 700-1600 kg/ha and incremental returns per year average Rs 250-2200/ha.

The results from different states from 'Minikit' trials initiated in 1976 by the Indian Council of Agricultural Research (Table 4) provide further proof for the profitability of regular fertiliser application of existing low yielding trees.

READ

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