

CASHEW RESEARCH AND INDUSTRIES IN THE EIGHTIES*

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Fellow members:

I have great pleasure in welcoming you all to this Sixth Annual General Body Meeting of our Society. At the outset I thank everyone of you for the whole-hearted co-operation and assistance rendered to me in running the affairs of our esteemed society for the last two years. I am also glad to say that our Society has made considerable strides during these two years and I am sure we will continue to do so and become one of the premier scientific societies of this country in the near future. This optimism is not a mere wishful thinking because as you are aware, within the short span of its existence, we have organised/is being organised two important international scientific symposia and I am sure that the name of our Society has become very familiar with the agricultural scientists, growers and industrialists concerned with plantation crops all over the world.

As an agricultural scientist my association for over a quarter century in the scientific research had been only in plantation crops out of which the major portion has been spent on research on coconut. During the last few years, as you are aware, my association has been intimately connected with the cashew and spices and I thought it is appropriate on this occasion to speak a few

words on cashew research and industries in view of the so-called "Cashew Crisis" in this country.

A crisis is necessary at least for us to open our eyes and to take stock of the situation, and without such a crisis usually we are stagnant and we take things for granted without actually gripping the problem and finding a solution. Now let us review the reason behind the so-called crisis in the cashew industry. The crisis is, I should say, at the outset, not only for the cashew trade, but also with the cashew production and consequently directly connected with cashew research also. If we had anticipated the shortfall in cashew production and taken appropriate steps to increase the production through the application of agricultural inputs including research, I am sure, the present crisis would not have been here. As you are aware, the International Cashew Trade developed since 1920's and it remained almost in the initial stages in the thirties also crossing the barrier of 10,000 tonnes only towards the end of thirties. This stagnation in cashew trade for nearly two decades is traceable to the low keeping quality of processed nuts with the result the packed material could not reach the destinations in Europe and USA by the sea route, which obviously took long time. However, a sudden spurt in export of processed nuts

* Presidential address delivered in the Sixth Annual Meeting of the Indian Society for Plantation Crops. 20 January 1979, Kasaragod, Kerala, India.

has become feasible with the improvement of packing devices, specially the development of the process of vacuum packing. India had absolute monopoly of the export of processed nuts in the sixties when it exported almost about 50,000 tonnes on an average value over 1000 million rupees. However, the development of cashew industry in this country was directly correlated with import of raw nuts from the East African countries which also reached about 75,000 tonnes during the sixties. However, the decline started by the middle of sixties and India's monopoly in the export trade of cashew started dwindling. Today India accounts only for about two thirds of the world cashew trade. The indigenous cashew production is not adequate to sustain the level of export. The development of mechanical processing facilities in several East African countries, the main source of raw nuts for this country, has been mainly responsible for India's gradual reduction in import of raw nuts.

In India, shelling, peeling, grading and almost all the work connected with the cashew processing industry are being done by man labour of Southern Kerala mainly in and around Quilon. Among the 400 processing units in India, most of them are located in and around Quilon.

Only a few years ago, the import of raw material into India was being channelised through the private importers. However, the Government has stepped in and the import has been brought under the State Trading Corporation. In addition to this, the States have also put restrictions on the movement of raw cashewnuts. All these have put considerable strains on the cashew industry and in 1978 India's export of cashew was an all time low record with about 20,000 tonnes of processed nuts. Unless we take effective and concrete steps to stem the tide India's position as a leading exporter of processed cashew kernels may pass down to history.

In order to analyse the steps to be taken to stem the tide, it is also necessary to review the history of cashew research and the production trends. All of you are well aware that cashew had its origin in the South East Brazil and it was introduced to India in the early 16th century by the Portuguese and the common belief is that the crop was introduced only as a soil binder for the coastal areas. By tradition and habit cashew became a neglected crop suitable only for soils unsuitable for cultivation of any other crops. The Spaniards who were aware of the use of cashew in medicines, foods and beverages, probably visualised the potential importance of this crop to India. However, we took everything for granted as is the case in the history of improvement for many other crops, and though isolated attempts were made for the improvement of the crop, it had never reached a take off level till the last 2-3 years. Cashew was a no man's crop and no attention, whatsoever, was paid for its culture and maintenance.

At this juncture I think it is also appropriate to review in brief what little work has been done for the improvement of the crop in this country which started in the fifties. Initial attempts on the improvement of the crop were in the form of ICAR funded ad hoc research schemes in various states. However, an All India Co-ordinated Spices and Cashew-nut Improvement Project with its headquarters at Kasaragod, was launched by the ICAR in 1970 with nine centres initially of which five centres were for cashew research. It expanded its activities in terms of research projects as well as coverage of areas, and at present there are 17 centres wherein work on varietal improvement, input requirements as well as plant protection measures is being carried out at a substantial scale. The work under the Project for the last few years has been responsible for identification of improved types/hybrids which have got an yield potential up to 30 kg/tree/year. In a review of the

work done at the recently concluded workshop in Goa, Dr. Sukhdev Singh, Deputy Director General (ICAR) rightly remarked that the cashew production has reached a "take-off" stage as a result of the improved varieties evolved under the Project. Among other important achievements I should specially mention the control measures developed against tea mosquito which is termed to have saved about 30% of the crop yield which might have otherwise been lost due to this pest infestation. Recently the manurial requirements also have been recommended, though considerable work is to be done on this aspect of the plant culture.

In spite of the available technology mentioned above, an analysis of the cashew production figures shows that the increase in production is not proportionate to the increase in area. Cashew plantations are raised on marginal lands and even now receive very little attention from the growers. The area under cashew was increased from 1,03,581 ha in 1950-51 to 4,01,686 ha in 1974-75. During the same period the production increased from 58,968 tonnes to 1,65,000 tonnes. The reason for this low production can be attributed to a very large proportion of the plantations consisting of self-sown seedlings or raised from unselected seedlings. According to a survey report of Abeyesingh, over 95% of the world collection of raw nuts processed is picked from self-sown wild plantations. Conceivably the production potential of these plantations is very low. A few years earlier small growers were not motivated in taking cashew cultivation because of poor economic returns compared to many other cash crops like pepper, cardamom, etc. The situation has changed now. The price of cashew kernel and consequently the price of raw nuts have shot up steeply and adequate agrotechnology is available to increase the production. What is required is a dynamic production drive starting from research through transfer

of technology to farmers and ending with the processing. When I say dynamic action programme, it doesn't mean more routine selection and breeding programmes, fertiliser trials etc., but what is required is an action programme initiated from the lab and reaching the small growers for the fullest utilisation of the benefit of research and the consequent allround improvement of the growers and the industry.

The obvious solution for overcoming the present crisis as stressed earlier is to increase the indigenous production of raw nuts. It has been officially estimated that India should produce about 4,50,000 tonnes of raw nuts annually, if it has to maintain its present position in the trade and ensure employment to the workers in the industry. This means our production potential has to be trebled in the near future. Let us ask ourselves whether such a remarkable feat is possible within a short time. Presently I feel that the situation is ideal, because of the remunerative price level, the interest of the farmer, the trading community, the processor and exporter has been aroused and it is for us, the agricultural scientists, to exploit the situation to the fullest extent. The results of the All India Co-ordinated Spices and Cashewnut Improvement Project referred to earlier have conclusively proved that if only two important agro-technologies are applied to the cashew plantations, the increase in production of raw nuts will be about 2-3 times in a matter of two years. The two items under reference are the control of tea mosquito and fertiliser application. Coupled with this, it is also necessary to supply the clonal material from the high yielding selections to the farmers at a reasonable price. The know-how for the vegetative propagation is already available and it is for us to see that a continuous supply of clonal material of improved high yielding types is supplied to every demanding farmer. It is also necessary to develop an integrated pest

management practice so that the farmer doesn't have the problem of spraying a number of chemicals, that too, at a very abnormal cost to protect the plants. Aerial spraying of insecticides and foliar spray of fertilisers are some of the items that are to be given priority. The financial input requirements may not be a limiting factor for this. Even international agencies like the World Bank have come forward to finance the research and development schemes for increasing cashew production. It is gratifying to note that a National Centre for Cashew Research is being set up.

Every part of cashew plant is useful to man like 'Kalpavriksha', the coconut. Its edible and nutritious kernel containing 44.3% fat, 18.4% protein, 28.7% carbohydrate, minerals and other ingredients form an important desert nut. Cashewnut Shell Liquid (CNSL) which is a by-product of cashew industry is an important raw material in the paint, chemical, plastic and wood industries. Cashew testa (peel) is a valuable by-product of cashew industry. It contains about 40% tannin with properties similar to that of wattle bark tannin. The residue, remaining after extraction of tannin is used in oil drilling need and in broiler compound. The cashew apple (enlarged peduncle) is practically wasted in most of the major cashew growing states in India except Goa, though it is highly nutritious and could be made use of. It is estimated that over 10 lakh tonnes of cashew apple is wasted in this country every year. The cashew apple is rich in vitamin C and minerals and compares very well with other fruits like mango, apples etc. In Goa, cashew apple is utilised for the production of alcohol and beverages. The processing methods have also been developed at the CFTRI, Mysore for preparation of juice, syrup, jam, chutney etc. from cashew apple. Besides this, cashew tree is valuable source of raw materials for pulp industry and is the major source of fuel in Kerala.

We have at hand such a unique tree and it is necessary for us to develop a village based cashew industry which will be able to utilise every part of it. At village level cashew processing factories could be set up and extraction unit of CNSL as well as tannin also could be established. It may not be even out of place to suggest for setting up of small distilling unit at village level which does not require much technological innovation. Even if prohibition is introduced as a national policy, I find a bright future for cashew feni industry in this country from the export point of view. As you are aware one of the major attractions for tourists in Goa in addition to the natural beauty is the native feni distilled from cashew apple which is comparatively cheaper than any other liquor manufactured in India from other sources.

As a programme of establishing nutritional gardens, at least a few cashew trees could be grown in each of the school compounds in the cashew growing regions. Cashew can also be profitably grown in the coastal sandy belts and on both sides of the railway tracks of Peninsular India under the tree planting programme being taken up in a massive way. This is all the more important at a time when we are very much concerned with an energy crisis.

The Union Minister for State for Agriculture, Shri Bhanu Pratap Singh in a recent report has correctly pointed out that the terms of trade between agriculture and non-agriculture are most adverse for Indian farmers. The price relationship and marketing conditions will have to be improved considerably before the small farmers can be expected to increase the productivity of the plantations. Marketing in our conditions has so far been consumer oriented in general and not production oriented as in other agriculturally advanced countries. This is particularly true of cashew.

The difference between these two is quite obvious. In the former, marketing is organised to serve the interest of the consumer even at the cost of the producer's interests. Necessary conditions have to be created in rural areas so that small farmers do not have to sell their produce in distress to the processing units who take a lion's share of the profit at present.

If all these should materialise, I foresee a bright future for the cashew production and industry. Since ours is a premier centre for cashew research in India, I hope with the co-operation of the fellow scientists, we will be able to discharge this onerous responsibilities and contribute our mite for increasing the production and stabilise our position in the international cashew trade.