RP 474

INAUGURAL ADDRESS

DR. M. V. RAO
Deputy Director-General, Indian Council of Agricultural Research, New Delhi.

Distinguished colleagues on the dais, Ladies and Gentlemen,

I feel greatly honoured to be here today and I am grateful to the organizers for having given me this opportunity to participate in the deliberations of the Fifth Annual Symposium on Plantation Crops, and also to interact with the scientists working on various aspects of these crops. Those who conceived the idea of holding periodical symposia on plantation crops deserve congratulations since it has helped to get the numerous scientists working on these crops on a common platform for discussion and review of their research results. It is indeed very sad that the moving spirit behind these symposia, Dr. C. S. Venkata Ram, former Director of UPASI Tea Research Institute, is no more with us. We pray to Almighty for the peace of the departed Soul.

The plantation crops in this country occupy around 2 per cent of the total cultivated area, but earn a foreign exchange of about Rs. 8900 million rupees annually which amounts to about three-fourths of the export earnings of all our agricultural commodities. Besides their importance in our national economy, this group of crops have many features in common.

A perusal of our achievements in increasing the production and productivity of the plantation crops shows that whereas substantial increase in production has been achieved in crops like rubber, tea and coffee, in the remaining plantation crops, production has almost stagnated. Even in the case of the three crops mentioned above, the increase has been due to better cultural, manurial and plant protection methods. The contribution of improved varieties in increasing the production of plantation crops has been limited, mainly because of the narrow genetic base

available in these crops at present. Hence our immediate task should be to diversify and widen the genetic base and have more varieties to cover large areas. If we look at rice, varieties like 'Jaya', 'Padma', or 'IR-26' occupy millions of hectares, and one feels that we are sitting at the tip of a volcano, since, any time a large-scale epidemic might occur when such a variety can succumb to a new virulent race of pathogen. In wheat, for example, out of 22.5 million ha, 8 million ha is occupied by a single variety 'Sonalika' right from Pakistan to Bangladesh. In plantation crops also, we have examples of rubber and coffee, where whole plantations have been wiped out by disease epidemics. In coffee, it is said that nearly two-thirds of world's collections have originated from a single tree, and so is the case with rubber. Restricted flow of genetic materials due to fear of introducing new pests or diseases, particularly of unknown etiology has been the major factor for this. In coconut, the narrow genetic base available in the country has received the attention of the ICAR and, to ameliorate the situation an expedition sponsored by FAO/IBPGR was sent in 1981 to the Pacific Ocean Countries in Polynesia and Melanesia. Another expedition would be undertaken to Indian Ocean region, and these efforts are expected to enlarge the genetic diversity in coconut, considerably. The seedlings of these newly acquired germplasm accessions have been raised in the Andamans where a World Coconut Germplasm Centre has been started.

There is also an urgent need to collect and catalogue indigenous coconut germplasm, right from Goa to Cape Comorin, and the Eastern regions of Manipur and Mizoram, as also the Andaman, Nicobar, and Lakshadweep group of Islands.

It is for the younger generation to organize more expeditions to collect the naturally occurring variability, not only in the above mentioned areas but also in the indigenous biosphere reserves such as Silent Valley forests, in all our commercial crops, including black pepper. At the same time, systematic hybridization efforts should be made to recombine the useful characters in the existing collections. In black pepper for example, screening for *Phytophthora* reaction has revealed that while the disease incidence is about 45 per cent in some genotypes, it is about 95 per cent in Panniyur-I. Perhaps if we make crosses between genotypes showing low incidence,

available in these crops at present. Hence our immediate task should be to diversify and widen the genetic base and have more varieties to cover large areas. If we look at rice, varieties like 'Jaya', 'Padma', or 'IR-26' occupy millions of hectares, and one feels that we are sitting at the tip of a volcano, since, any time a large-scale epidemic might occur when such a variety can succumb to a new virulent race of pathogen. In wheat, for example, out of 22.5 million ha, 8 million ha is occupied by a single variety 'Sonalika' right from Pakistan to Bangladesh. In plantation crops also, we have examples of rubber and coffee, where whole plantations have been wiped out by disease epidemics. In coffee, it is said that nearly two-thirds of world's collections have originated from a single tree, and so is the case with rubber. Restricted flow of genetic materials due to fear of introducing new pests or diseases, particularly of unknown etiology has been the major factor for this. In coconut, the narrow genetic base available in the country has received the attention of the ICAR and, to ameliorate the situation an expedition sponsored by FAO/IBPGR was sent in 1981 to the Pacific Ocean Countries in Polynesia and Melanesia. Another expedition would be undertaken to Indian Ocean region, and these efforts are expected to enlarge the genetic diversity in coconut, considerably. The seedlings of these newly acquired germplasm accessions have been raised in the Andamans where a World Coconut Germplasm Centre has been started.

There is also an urgent need to collect and catalogue indigenous coconut germplasm, right from Goa to Cape Comorin, and the Eastern regions of Manipur and Mizoram, as also the Andaman, Nicobar, and Lakshadweep group of Islands.

It is for the younger generation to organize more expeditions to collect the naturally occurring variability, not only in the above mentioned areas but also in the indigenous biosphere reserves such as Silent Valley forests, in all our commercial crops, including black pepper. At the same time, systematic hybridization efforts should be made to recombine the useful characters in the existing collections. In black pepper for example, screening for *Phytophthora* reaction has revealed that while the disease incidence is about 45 per cent in some genotypes, it is about 95 per cent in Panniyur-I. Perhaps if we make crosses between genotypes showing low incidence,

show the tremendous untapped potential in the available cultivars/ varieties in plantation crops which could be harnessed to take these crops to much higher levels of productivity. One of the constraints in achieving higher production levels in most of these crops has been our inability to meet the ever-increasing demand for elite planting materials to raise new plantations. Though commercial methods of propagation are available, I feel that there is a need for resorting to non-conventional methods of propagation such as meristem and tissue culture for increasing the pace of progress in this area to catalyse their production and productivity.

With regard to root (wilt), a serious disease of coconut with which the farmer has been co-existing for the last 100 years, apart from suggesting prophylactic measures to contain the disease and prevent its further spread, we are now also definite about the pathogen involved. We have to emphasize the management aspects.

The entire field of physiology of growth regulation is now assuming greater importance, and in palms, in addition to morphological characters, the physiological parameters should also be considered for assessing and predicting the performance of adult palms. Preliminary data on some parameters such as chlorophyll content, nitrate reductase activity and NAR, are available for predicting adult palm potential based on seedling scores for these characters.

Several commercial formulations such as Mixtallol, are reported to have given 40-50 per cent increase in yield in vegetable crops. Similar information on plantation crops is lacking.

With regard to Economics, Marketing and Extension, the point of concern is that the farmer is not getting the right price for his produce. The case of apples is quite relevant, where the farmers of Kashmir, Himachal Pradesh and Uttar Pradesh get only Rs. 0.50 per kg. whereas in Delhi markets we pay Rs. 5/- or more. Hence, we need to evolve a system of price protection.

While reviewing the work on spices, we find that in crops like vanilla and allspice not much has been done, and so is the case with other minor spices. Cess Fund Schemes of ICAR can be

thought of if these are not included in the regular Plan budget. Similarly, there are a number of under-utilized plants such as Guayule rubber for which there seems to be good scope in Haryana. As regards oil palm, it remains a big question still, whether India should go in for this. Malaysia has an ideal rainfall distribution for oil palm, unlike Kerala which has 3-4 months of drought. Moreover, it would be disastrous to destroy the forests in Andamans for planting oil palm. India with its vast potential in traditional oilseeds, including coconut, need not go in for oil palm, at the cost of destroying our valuable forest wealth.

I have briefly presented before you some of my thoughts on the problems requiring your attention in the hope of stimulating further thinking and discussion during this Symposium.

I have great pleasure in inaugurating this Fifth Annual Symposium on Plantation Crops, and I wish your deliberations all success.