

Pepper Research - Problems

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Today pepper is estimated to contribute up to 30% of the world's trade in spices of which India's contribution is 22-32%. India is followed by Malaysia and Indonesia as the other leading producers. In 1974-75 the production of pepper in India reached an all time high of 28.75 Thousand tonnes of which more than 98% was accounted for by Kerala. About 85% of the produce is exported to the USSR, the USA, Italy and Canada.

India had a near monopoly in pepper trade in the past; but in recent years other countries have claimed a higher share because of lower prices they can afford. This has happened in spite of the fact that Indian pepper still enjoys an overall preference due to their quality

Though pepper has been under cultivation in India from time immemorial, research on pepper is only recent origin and, therefore, many fundamental as well as applied problems remain yet to be tackled.

The most important problem facing pepper industry in India today is low yields and consequent high cost of production. The productivity potential of pepper is indeed tremendous. The most intensive method of cultivation and which gives the highest yield is the one which appears to have been developed by the Chinese and almost exclusively used by them in Banka and Biletong, in parts of the S. E. Asian mainland and in Malaysia. The maximum annual yield in these gardens is reported to be as high as 7-8 ~~QAR~~ ^{QAR} tonnes/ha. As against this the annual yield in India is a miserably low 235 kg/ha. The cultivation of pepper in India is of the most primitive form. The only thing the farmer does is the planting of pepper cuttings at the base of any tree in the homestead. Little attention is given to the crop subsequently. A more intensive form of cultivation, especially in Cannanore and Calicut districts of Kerala, is to grow the vines as a pure plantation on

a shading standard like *Erythrina indica*. Even here the operations include only land clearing, digging round the vine once a year and shading and training in the first two years of planting. Practically no manuring is done. The traditional practice was to use virgin lands under forests on hill slopes. No replanting was practised. The situation is changing only now.

Many of the pepper cultivars grown in India are either chance seedlings or mutations, selected for desirable characteristics and maintained by vegetative propagation. These cultivars are known by the place of origin or by local names like 'Malligasara', 'Kalluvally', 'Uthirankotta', 'Karimunda', 'Poonjatanmunda', 'Naranyakodi', and 'Kuthiravally' which indicate striking features of the plants.

The clonal method of propagation has made it possible to fix the vigour and other characters of the cultivars. Thus all the variability now found in the commercial varieties or cultivars may have been derived from a limited number of genotypes originally selected from chance seedlings, and it is not surprising that the variability in the cultivated type is very low in comparison to that in wild types. Variability in characters like berry size, spike length and nonvolatile extract, oil and piperine content is very wide among wild types. Because of the highly heterozygous nature of the cultivars, perpetuated through years of vegetative propagation, selfing undoubtedly offers very good scope for exploiting the locked up variability for selection. In the past the selection in pepper has been generally for higher percentage of oleoresin and piperin content of berries. But of late, there is an increase in demand for low pungency varieties especially from the East European countries.

There is thus an enormous amount of genetic variation yet to be systematically and critically