

Pepper Cultivation in Andaman and Nicobar Islands

A. K. SADANANDAN & R. B. NAIR

Central Plantation Crops Research Institute, Sub-Station,
Port Blair, Andamans.

Pepper (*Piper nigrum* L.) is one of the ancient commercial crops of India. Pepper had always been an article of trade with foreign countries even from the fourth century B. C. India's pepper is of the finest quality and superior to those produced in other important pepper growing countries like Indonesia, Sarawak and Borneo. Almost 75% of the black pepper produced in India is exported earning about Rs. 12 to 15 crores in foreign exchange annually. Pepper contributes nearly 35% of the total export earnings of the spice group. The importance of the crop in Indian economy is thus evident.

In India, Kerala is the principal pepper producing state, having 96% of the country's production. No data are available on the extent of pepper cultivated in Andaman and Nicobar Islands. However, it is estimated that by the end of the IV plan about 20 ha. would be under pepper in these islands.

Climate and soil

Pepper is essentially a plant of warm humid tropic. Annual rainfall of 2500 mm to 3000 mm is ideal for its successful cultivation. Pepper tolerates a minimum and maximum temperature of 10°C and 40°C respectively. It can be grown almost from sea level upto an altitude of 1200 metres. Andaman and Nicobar Islands enjoy a warm humid tropical climate. The annual rainfall is 3021 mm. Number of rainy days per month varies from 1 to 21, lowest being in

February/March. The annual sunshine is 4287 hours. The variation in temperature is very little. Mean maximum temperature is 33.3°C (April) and minimum 20.8°C (February). Average humidity is 81%. These figures evidently show that the climatic conditions in Andaman and Nicobar Islands are congenial for pepper cultivation. The crop thrives best in well drained clayey loam soil rich in humus and plant nutrients. Major soils of Andaman and Nicobar Islands are clayey loam, with the available nutrients, N (medium to low), P (poor) and K (medium to low). The soils are mostly acidic and pH varies from 5.0 to 6.3.

Varieties

The most important varieties of pepper cultivated in Andaman and Nicobar Islands are Balankotta, Kalluvally, Karimunda, Kottanadan, Uthirankotta and Panniyur-I. Yield data are not yet available to make a comparative study on the performance of different varieties. However, performances of Karimunda, Kottanadan and the hybrid Panniyur-I are found encouraging.

Cultivation

Pepper is cultivated only as a mixed crop in Andaman and Nicobar Islands wherein, vines are trained on existing trees such as arecanut, coconut, jack and on shade trees used as standards in plantations like coffee, orange etc. Pits of 45 cm. cube are dug with the onset of monsoon, a foot away

from the base of the living trees. The pits are filled with loose jungle earth and leaf mould. Two to three rooted cuttings are planted during the month of July-August on the north-eastern side of the standard thereby avoiding the direct hit of the sun on young vines. No regular inter-cultivation or digging is carried out.

Manuring

Manuring of pepper is very seldom done by the cultivators. Pepper planted even in virgin soil requires manuring since it is a perennial vine and continuous cropping over a number of years results in depletion of soil nutrients and consequent decline in yield. No information is available on the manurial requirement of pepper under local conditions. However, Andaman Agriculture Department recommends a schedule of 500g. of ammonium sulphate, 250g. of super phosphate and 50g. of muriate of potash per bush annually. The above dose appears to need modification on the basis of research data.

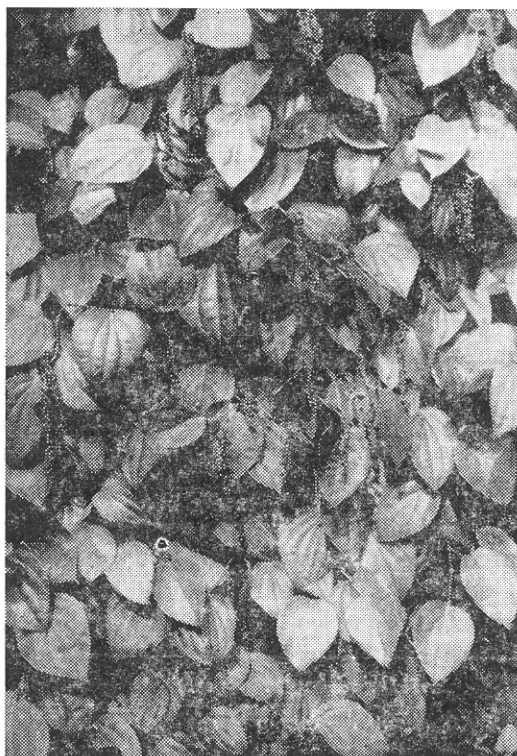
Harvesting and processing

Pepper vines commence yielding usually from the third year and attain steady bearing stage in 6 to 7 years. Flowering is in May-June. The crop will be ready for harvest in December-January, when berries on the spikes are ripened, turning red or orange in colour. Harvesting is done with the aid of ladder. The whole spikes with the berries are spread out on the floor and trampled under the feet to separate the berries. The berries are then dried in the sun for 7 to 10 days. When fully dried, the outer skin becomes black in colour and characteristically wrinkled appearance of black pepper of commerce is obtained. The percentage of dry pepper to green is about 34. Preparation of white pepper is not in vogue. Average yield of pepper appears to be higher than yield reported from mainland. The

growth of Panniyur-I is very promising and has borne fruits in the second year of its planting.

Pests and Diseases

Pepper vines of the Islands are not free from pests and diseases. Stray cases of pollu-flea-beetle (*Longitarsus nigripennis*) are noticed in certain gardens. Spraying of



Panniyur-I growing at the Soil Conservation Research Demonstration and Training Centre at Sipighat, Port Blair, Andamans. The plant has started yielding in the second year of growth.

0 2% D D T. once in July and in October together with regulating shade will be very effective. Giant African snails cause damage to pepper in Andamans as they eat away the tender leaves including terminal shoots of vines. Snail is controlled by the use of 5% Metaldehyde. Clean cultivation also reduces

the population of snail. Incidence of 'slow wilt' (*Fusarium*) and 'quick wilt' (*Phytophthora palmivora*) are also seen. 'Slow wilt' can be controlled by drenching the soil around the root zone with 0.1% wet ceresan. Bordeaux mixture (1%) spray one each just before the South West and North East monsoon and a soil drenching with 0.1% wet ceresan after the receipt of South West monsoon will be effective in controlling 'quick wilt'.

Causes for the low production and scope for improvement

The comparatively small area and low production in Andaman and Nicobar Islands can be attributed to the following causes.

1. Difficulties in obtaining quality planting material from the mainland during the season in view of the remoteness of these islands and the transport bottlenecks within the islands and inter-islands.
2. The new hybrid variety of pepper Panniyur-I is an early bearer and is reported to give 3 to 4 fold yield more than the local variety. This variety is also comparatively resistant to drought and wilt disease. By replacing the uneconomic vines and starting new plantations with this high yielding variety Panniyur-I, pepper production can be increased at lesser cost, thereby boosting up the economy of Andaman and Nicobar Islands.
3. Lack of technical know-how for the production of quality planting material for local distribution.
4. Growers are not in the habit of manuring pepper which is highly responsive to fertilizers. In Kerala, it has been reported that 100 g. N 160 g. P and 60g. K per vine followed by 9 kg. of well rotten cattle manure or compost per year is the optimum manurial requirement of pepper. The organic manure has to be applied in May after taking basins 15 cm. deep and 30 cm. away from the base of vine. N is to be applied in July-August and P and K in October-November. Fertilizers are to be forked well into the soil. Application of lime in alternative years at 1 kg. per vine during April-May soon after the receipt of first showers will be beneficial as the soils are acidic. Calcium ammonium nitrate may be used instead of ammonium sulphate as a source of N and rock phosphate instead of super phosphate as a source of P. The average yield of black pepper in India is around 300 g. (dry/standard) whereas in South East Asian countries like Indonesia it is 1.5 kg. It is reported that the varieties cultivated in the South East Asian countries are in no way superior to varieties cultivated in India. The main reason for increased yield may be attributed to high productive soil and package of practices adopted.
5. The small growers are usually indifferent to the different soil conservation practices to be adopted in spite of the fact that pepper is cultivated on hill slopes. After very sharp shower, huge quantities of precious top soil are washed away depleting the fertility status of soil.
6. Damage to the crop caused by pests and diseases due to non adoption of plant protection measures.
7. The success of improving the yield of pepper depends on the enthusiasm and keenness that can be instilled into the farmers. This can be done in the way of supplying quality planting material in time at subsidised rate, by giving

advice and assisting the farmers on the scientific methods of cultivation, laying out demonstration plots etc. The farmers must also be helped in the opening up of new lands for pepper cultivation.

8. The need for co-operatives is felt for supplying farmers' requirement of planting material, manures, implements on credit in addition to rendering assistance for marketing of produce. Credit

is to be extended on the basis of their production, requirement and repaying capacity.

Acknowledgement

The authors are grateful to Shri M. C. Nambiar, Project Co-ordinator (Spices and Cashew), Central Plantation Crops Research Institute, Kasaragod, for going through the manuscript.

