Package of Practice

Black Pepper Cultivation

An Initiative of North Eastern Council (NEC)

Implemented by North Eastern Development Finance Corporation Limited (NEDFi)

Black Pepper
Piper nigrum
Piperaceae

Black pepper, the king of spices, is being cultivated on a large scale in India. It stimulates the digestive organs and produces an increased flow of saliva and gastric juices. Black pepper is used for seasoning many dishes and blending flavour and pungency to the cuisine.

Climate and Soil: Black Pepper is a crop of warm humid tropics. It requires adequate annual rainfall of 2000-3000mm and optimum temperature of 10-40^{0}C for suitable cultivation. Pepper grows well in red lateritic soils or alluvial soils rich in humus with a soil pH range of 4.5 to 6.5.

Varieties:

Cheriyakaniyakkadan, Cheriakodi, Daddagya, Kalluvally, Kaniakkadan, Arakkulamunda, Balan cotta, Karimcotta, Kartmunda, Kottanadan, Kuthiravally, Malligesara, Narayakkodi, Panniyur-1, Panniyur-2, Panniyur-3, Panniyur-4, Subhakara and Sreekara, Panchami, Pournami, Plode 2.

Propagation:

Black Pepper can be propagated by seeds as well as by vegetative means. The seeds are germinate within a month in the nursery beds and will be ready for transplanting within 45 days during July-August. Pepper is propagated by cuttings raised mainly from the runner shoots. Propagation by cuttings is commercially preferred over seed propagation. Rapid multiplication technique and micro propagation methods are also used for propagating black pepper.

Planting: Black pepper, being a climber, needs standards for support. The pits are filled with a mixture of top soil, 5 kg of FYM/compost, 2 kg neem cake and 150 g rock phosphate. About 3 to 4 rooted cuttings are planted per standard. Usually, the vines are planted during June-July in pits of 50 cm3, dug on the northern side of the standard 15 cm away from it.

Manures and Fertilizers: Apply FYM @ 10 kg/vine just before the onset of South West monsoon. Recommended fertilizer dose of 100 g of N, 40 g of P_2O_5 and 140 g of K_2O per vine are applied in two split doses in the months of May - June and in September - October.

Weed Control: Two weeding are done during the months of June - July and October – November.

Intercropping: Intercropping of pepper garden with ginger, turmeric, Colocasia and elephant foot yam is advantageous.

Aftercare: Mulching is very essential where pepper is grown with minimum shade, to conserve moisture, using banana trash, dried grass, sawdust, areca husk, straw and other substances. The vines are to be trained to the standards. Prune excessive foliage of the standards and limit the height of the standards to about 6 m. Spray NAA @ 40 ppm to increase the berry size.

Irrigation: Protective irrigation to be applied in basins during December - May at 10 days interval.

Harvesting and Yield: Black pepper starts yielding from third year onwards. The harvesting season is from November to March. Harvest is done by hand picking the whole spikes when few berries in the spike start turning red. One hectare plantation of 7 or 8 years old gives about 800 to 1000kg of black pepper.

Post-Harvest Management: The berries are separated and dipped in hot water (80°C) for one minute and sun dried for 7 to 10 days.

Plant Protection Measures:

Pests

Pollu Beetle/ flea beetle: Spraying vines with Endosulfan (0.05%), Quinalphos (0.025%), Dimethoate or Monocrotophos (0.05%) twice a year. during July and September, effectively controls the pest.

Top-shoot borer: Spraying the vines with Endosulfan, Dimethoate, Phosphamidon or Monocrotophos at 0.05% concentration at the point of new shoot emergence to be effective in controlling top-shoot borer infestation.

Leaf gall thrips: Spraying with Monocrotophos, Dimethoate, Endosulfan (0.05%) or Phosphomidon (0.03%) during the emergence of new flushes reduces the infestation.

Scale insects and mealy bugs: Spraying with Monocrotophos or Dimethoate (0.1%) or Quinalphos (0.05%) during January-February at 15days intervals checks the infestation.

Diseases

Quick wilt or foot-rot disease: The soil should be drenched twice around the base of the vine at a radius of 30 to 45 cm with 0.1% solution of methoxy ethyl mercuric chloride (Agallol G 3%) or Copper oxychloride (0.2%). The vines should be sprayed and drenched with 1% Bordeaux mixture during the onset of the Southwest monsoon and once again during the peak period of monsoon.

Slow wilt: A soil drenching treatment should be given with 0.1% mercurial fungicide or 1% Bordeaux mixture @ 5-10 1/vine 2-3 times during the monsoon season to the root zone. Apply Phorate 10 G or Carbofuran 3 G @ 30 g/vine plus Bordeaux mixture spraying and drenching plus soil application of neem cake @ 2 kg/vine during May-June and October- November.

Pollu disease (Anthracnose): It can be controlled by two rounds of spraying with 1% Bordeaux mixture or Captafol (1.0%) once before flowering and at berry formation stage or spraying 0.2%.

Cost and Returns of Black pepper Crop (Rs/ ha.)

(approx. Amount in Rs.)

Particulars	Cost & Returns
Land Preparation & development	25000
Cost of Seed /planting material	20000
Manures & fertilizer cost	18000
Plant Protection cost	16000
Cost of Irrigation	14500
Cost of Labour wages (planting, intercultural operations)	15000
Cost of Farm machinery heiring charges and agril equipment	5000
Rental cost of land	20000
Cost of Harvesting	8000
Cost of Marketing	10000
Miscellaneous cost	4000
Total cost of cultivation	155500
Average Yield	10q/ha
Average selling price of Black pepper	Rs.400/kg
Average Total Income / Return	400000
Net Income	244500

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