

Rapid multiplication of black pepper



Black pepper (*Piper nigrum*) is a perennial climbing vine grown extensively for its berries used as spice and in medicine. One of the main factors responsible for the low productivity of black pepper in the country is cultivation of low yielding and unproductive vines. For increasing the black pepper production in the country, extensive new planting and replanting of senile and unproductive vines with high yielding varieties is essential. Thus, there is a great demand for production of high quality planting material within the shortest time.

The conventional method

The conventional method of production of planting material in black pepper involves rooting of 2–3 noded cuttings of runner shoots raised in polybags in the nursery. The disadvantages of the method are, need to have a large quantity of planting material, low sprouting, and poor root development and field establishment.

An improved method

In the improved method, black pepper vines of selected varieties (both runner and terminal shoots) are raised in polybags, planted at the base of bamboo splits filled with rooting medium and allowed to grow. As the vines grow, each of the nodes put forth new roots. These rooted nodes are cut into individual bits and planted in polybags.

How to do it?

Select a suitable area having good drainage. Provide overhead shade by either using 50% shade net or by growing shade trees. Take trenches 30 cm wide, 60 cm deep and of convenient length. Fill the trenches with soil-sand-farm yard manure mixture (1:1:1).

Select bamboos of 8–10 cm diameter, cut them into 1.25–1.50 m long pieces and split them into halves keeping the septa intact. Smear coal tar to prolong the life of bamboo splits. Arrange the bamboos

at an angle of 45° alternatively on straight wooden poles or strong supports and tie the bamboos to each other with coir rope at the free end. Plant the rooted cuttings in the trench, one for each bamboo split.

As the cuttings start growing, fill the bamboo splits with rooting mixture composed of farm yard manure - coirdust - sand in equal proportions. Tie each node carefully to the bamboo using banana fibre, so that every node is in contact with the rooting medium. For rapid growth, add nutrient solution consisting of urea (1 kg), super phosphate (0.75 kg), muriate of potash (0.5 kg) and magnesium sulphate (0.25 kg) in 250 litres of water. Drench each vine once in 15 days with half litre of this solution. Alternatively, drenching the vines with cowdung solution once in a month also encourages their growth.

When the vines reach the top of the bamboo, nip off the tip and crush the vine at the base of 3rd or 4th node from the ground, to activate the buds. After 7–10 days, cut the vine at the crushed point and remove it from the bamboo with the roots intact and with the adhering soil. Cut the vine into single noded cuttings. Plant each cutting in a polythene bag filled with fumigated mixture of soil-sand-farm yard manure (1:1:1). Application of *Trichoderma harzianum* @ 10 grams/bag would prevent *Phytophthora* infections. Arrange the bags in a well shaded area or in a shed and spray Bordeaux mixture 1%. When the buds start growing, transfer the bags to a partially shaded area. Apply the fertilizer or cowdung solution mentioned earlier for rapid growth. These cuttings will be ready for field planting after 2 months.

Advantages of the method

After planting in the bamboo, the first harvest of cuttings can be done after 3–3½ months and the subsequent harvests at

every 2–2½ months. Each rooted vine can give about 10 cuttings in one harvest and about 40 cuttings in a year. A shed of 6 m x 24 m would accommodate 600 bamboo splits. The method is thus advantageous for producing a large number of rooted cuttings within a short period, throughout the year. The cuttings are also robust due to the improved development of roots leading to more than 90% establishment in the field.

Precautions

- ◆ Ensure adequate shade and drainage.
- ◆ Ensure that every emerging node is in contact with the rooting medium on the bamboo split as it is crucial for rooting.
- ◆ Adopt timely plant protection measures. Just before monsoon, spray mixture 1% and drench the soil with copper oxychloride 0.2% or spray and drench with Ridomil-Mancozeb 0.125% or spray and drench with potassium phosphonate 0.3%. Apply phorate or carbofuran @ 1 gram per vine thrice annually.
- ◆ Protect the vines against insect pests. A spray with dimethoate 0.05% or monocrotophos 0.05% can keep away thrips, mealybugs and scales.

Text revised by : C. K. Thankamani
Edited by : J. Rema and P. Rajeev
Published by : Y. R. Sarma, Director
Indian Institute of Spices Research, Calicut, Kerala
March 2002

For further information, contact
Agriculture Technology Information Centre
Indian Institute of Spices Research
Calicut - 673 012, Kerala
Ph: 0495-731410 / 730704. Fax: 495-730294
E-mail: iisrclt@md3.vsnl.net.in
Website: www.iisr.org