

## Standardization of propagation technique of the medicinal plant *Piper longum* L

K. Abirami<sup>1</sup>, D. R. Singh, V. Baskaran and V. Damodaran

Division of Horticulture and Forestry, Central Agricultural Research Institute, India

**P**iper longum L. belongs to the family Piperaceae. It is a dioecious, perennial herb with a thick, erect and branched rootstock and an ascending or prostrate stem (Huber, 1987). Stems are numerous and about 60-90 cm long. Flowers are unisexual, sessile in axils of fleshy bracts supported by two lateral bracts. Fruits are very small and sunk in the solid fleshy spike which is about 2.5- 3.7 cm long. Under natural growing conditions it propagates vegetatively by horizontally grown stems (vegetative branches) having rootlets at each node. Fruits are formed from vertically arising stems (reproductive branches), which have no rootlets. Piper longum has wide distribution in India particularly in north-east India and Western Ghats. Piper longum (long pepper) has been used for medicinal purposes. Ayurvedic publications including Sanskrit texts, have discussed in great detail the use of P. longum as flavoring agents in foods. Fruits, roots and stems of P. longum are used for the preparation of several drugs in the Ayurvedic and Unani system of medicine. It forms an important component in ayurvedic preparations like trikadu and Panchakolam. The alkaloid "Piperine" is the most active component in the plant, while many other constituents such as Sylvestrin, Sesamin, Diaenolemin are present in different parts of the plant. Due to increasing demand at national and global level with the trend of 16.3% increase per annum have added value to this species concurrently entangled in prioritized list by NMPB. The rising demands have otherwise dramatically declined the stock in wild thereby necessitated the provocation of large scale cultivation. Hence the quality planting material is the initial step in nay production process. Hence we have attempted to standardize the propagation technology in Piper longum. We have taken different length of cuttings like single node, two node, three node and five noded cuttings to standardize the cutting size. We found that the three node cuttings performed better when compared to the other treatments. The days taken for sprouting (23 days) was less in three noded cuttings when compared to other treatments. The number of leaves per cutting (12.1), number of roots per cutting (22.5), shoot dry weight (4.9 g) and root dry weight (4.5 g) were found to be maximum in three noded cuttings. Different media combinations were used to study the survival percentage and rooting of piper longum cuttings using different substrates like sand, soil, FYM, coir pith, vermicompost, poultry manure, rice husk and saw dust. The survival percentage (82.2%) was higher in the media combination of soil: sand: coir compost: vermicompost in the ratio of 1:1:1:1. Similarly the shoot length (24.8 cm) and shoot and root biomass of the rooted cuttings were maximum in the media supplemented with equal concentration of vermicompost and coir compost when compared to other rooting media combinations.

abirami78@gmail.com