

STUDIES ON POD FORMATION IN *PIPER LONGUM* (L.)

E.R.L.B.ETAMPAWALA, K.U. TENNAKOON, C.V.S. GUNATILLEKE
AND I.A.U.N. GUNATILLEKE

Department of Botany, Faculty of Science, University of Peradeniya, Peradeniya

Piper longum (L.) (Piperaceae) is a perennial herb with a thick, erect, and branched rootstock and an ascending or prostrate stem. Almost all parts of the plant are used in the preparation of a range of herbal drugs. The fruit is the most widely used plant part for the preparation of a wide array of medicines in Ayurvedic and Unani medicine. Fruits of *P. longum* which contain the alkaloid piperine, volatile oils and resins are often used to treat diseases of the respiratory tract, coughs, bronchitis, asthma, muscular pains and inflammation.

Variation in pod formation and the subsequent pod maturation in *P. longum* plants raised from two types of shoot cuttings were examined in this study.

In order to obtain *P. longum* plants, cuttings comprising three nodes from horizontally growing vegetative branches and vertically growing reproductive branches were planted in polythene bags (15 cm X 25 cm) containing sand, top soil and farm yard manure in the ratio of 1:1:1. Plants were maintained under 50% shade ($850 \mu\text{mol m}^{-2}\text{s}^{-1}$) using coir mesh shelters. The experimental design included two treatments (types of cuttings), 15 cuttings per replicate and three replicates. Pod formation and subsequent changes were observed at weekly intervals for 16 weeks.

Maturation of fruits was observed in *P. longum* plants grown in the medium of sand, top soil and farm yard manure in the ratio of 1:1:1 and 50% shade. Randomly selected 40 pods of size 5 mm were observed until they were shed from the mother plants. The Colour change was observed and the length of the each pod was measured over a period of 46 days.

All plants obtained from reproductive cuttings, produced fruits within 12 weeks. In contrast 31 % of plants obtained from vegetative cuttings, produced fruits only after 12 weeks. 50 % of pods were shed from the mother plant within 22 days when they were 2.50 cm (± 0.06) in length. Thirty percent of the pods remained on the mother plant for about 35 days, when they were black in colour approaching maturity. The Maximum length of the pods observed was 3.50 cm after 45 days.

This study shows that reproductive branches of *P. longum* can be successfully grown and that they fruit early when compared to the vegetative branches.

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