

R M Dharmadasa¹, J Ranatunga¹, G A Dayatilake²

¹Ceylon Institute of Scientific and Industrial Research (CISIR), Colombo 7

²Faculty of Agriculture, University of Ruhuna, Mapalana, Kamburupitiya

Piper longum commonly known as "Tippili" is one of the most important medicinal herbs in the indigenous system of medicine. In spite of the country's favourable conditions to produce this important pharmaceutical raw material, at present Sri Lanka imports "Tippili" spending considerable amount of foreign exchange. This is mainly due to the lack of information on agricultural aspects and short supply of planting material for setting up of plantations. Therefore the present study was aimed to determine the possibility of using single nodal cuttings for propagation of *Piper longum* instead of using stem cuttings with 3-5 nodes. In addition, attempts were made to determine the ability of auxins to increase the efficiency of adventitious root formation from single nodal cuttings.

Stem cuttings were taken from mature vines and the basal parts of stems were cut into single nodal cuttings carrying healthy bud at leaf axis. Concentrations, (10 mg/l, 30 mg/l and 50 mg/l) aqueous solutions of indole-3-butyric acid (IBA) and naphthalene acetic acid (NAA) solutions were prepared. The basal ends of single nodal cuttings were dipped in respective solutions and left for 24 h in the dark. Each treatment consisted of 6 cuttings and was replicated 6 times in a Complete Randomized Design (CRD). The cuttings were planted in polyethylene bags filled with a mixture of sand: subsoil (2:1) and after 4 weeks the cuttings were removed, the number of roots, lengths and number of shoot buds were recorded. The data were subjected to statistical analysis. The highest mean number of roots per cutting (22) was achieved with the treatment of IBA at 10 mg/l, followed by NAA (20) at the same concentration compared to that of the control (11).

The results indicated that single nodal cuttings can be used for rapid multiplication of *Piper longum* and the efficiency of rooting and shoot bud formation can be increased significantly with the treatment of IBA at 10 mg/l concentration. This method can be recommended for cultivation of *Piper longum* on a commercial scale.