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**Rooting of orthotropic, plagiotropic and single nodal cuttings of black pepper**

**(*Piper nigrum* L.)**

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Possibility of an alternate plant production system using plagiotropic and orthotropic cuttings from 8-year-old field grown plants of two high yielding local selections of pepper (GK-49 and MB-12) were compared with currently available systems for rooting of single nodal cuttings. Rooting of cuttings using three cutting types i.e., orthotropic terminal cuttings with 6-7 nodes, plagiotropic cuttings with 2-3 nodes and single nodal cuttings from Bamboo Rapid Multiplication System of two local selections (GK-49 and MB-12) were taken for the study. All cuttings were established in polythene bags filled with normal potting mixture (equal parts of top soil, sand, cowdung and coir dust) and kept in a polythene humid chamber for 4 weeks and then allowed to harden for 10 weeks. Thirty cuttings were used per treatment and replicated three times. After 14 weeks data were collected on cutting success, shoot and root growth parameters.

High cutting success was observed in the three cutting types (orthotropic 85.7%, plagiotropic 78.9%, single nodal 87.8%). Significantly higher shoot growth was observed in single nodal (17.5 cm) than orthotropic (3.9 cm) or plagiotropic (1.6 cm) cuttings whereas new shoot production was higher in orthotropic (2.1) than plagiotropic (1.3) or single nodal (1.0). A higher number of new leaves was observed in plants produced in single nodal cuttings (4 leaves) and orthotropic (2.9 leaves) than plagiotropic cuttings (1.1 leaves).

A higher number of roots were observed in plants produced from orthotropic (13.3) cuttings than single nodal cuttings (8.8) plagiotropic (4.6). Higher root volume was given in plants produced from orthotropic (4.4 ml) and single nodal (3.2 ml) than plagiotropic cuttings (1.7 ml). Similarly higher root length was given in plants produced from orthotropic (25.2 cm) and single nodal (22.3 cm) than plagiotropic cuttings (15.7 cm). Root dry weight was higher in orthotropic (0.18 g) and single nodal cuttings (0.2 g) than in plagiotropic cuttings (0.06 g). Differences were not significant between the two local selections used. However, field establishment, life span and yield performance of the three types of plants should be evaluated in a field trial before arriving at the final conclusion.