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Use of rooted cuttings of Black pepper (*Piper nigrum*) to face drought condition

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Black pepper is propagated through vegetative propagation methods using cuttings. The recommended potting mixture contains topsoil, well rotten cow dung, sand and coir dust at the ratio of 1:1:1:1. Plants raised in this potting mixture using unrooted cuttings gave a success between 65%-70% in a drought is an unsatisfactory situation. The objective of the study was to study the performance of nursery plants established by using pepper unrooted cuttings and rooted cuttings in an extended drought condition. The study was conducted in a nursery at Udadumbara in Kandy District from January to May 2010. Two-nodal unrooted and rooted pepper cuttings were planted separately in clear polythene bags (20 cm x 12.5 cm and gauge 250) filled with the recommended potting mixture kept in 60% shade until four leaves appeared and then gradually exposed to sunlight for hardening. Poly bags containing unrooted cuttings were kept in propagators for seven weeks after potting. Plants were issued for field planting when six leaves and the shoot appeared. Rooted cuttings were prepared by planting cuttings in beds containing topsoil, well rotten cow dung, decayed paddy straw, fine sand and charred paddy husk at the ratio of 1:0.5: 0.5:1:0.5 respectively. Two-nodal cuttings were placed closely at 5.0 cm interval in the prepared potting mixture having 15 cm thickness. The planted cuttings were propagated for six weeks under 60% shade. Only rooted cuttings with a healthy shoot containing two leaves were transferred to poly bags containing the recommended potting mixture and looked after giving same conditions as for unrooted cuttings until field planting. The plants raised from unrooted cuttings reached six-leaf stage ready for field distribution in twenty weeks whereas rooted cuttings reached to the same stage in 17 weeks. The success was 67% for the plants raised by unrooted cuttings while it was 96% in the case of rooted cuttings. The success associated with a rigorous culling procedure to discard rootless, poorly-rooted, decayed, unsprouted, malformed and under-grown rooted cuttings. Since half grown cuttings were used for potting they were in a position to bear drought condition. Rigorous selection procedure enables to retain only vigorous plants with a healthy root system and discard substandard plants. The period expose plants to drought period curtailed by three weeks also helped to increase survival rate.

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