

## Effect of Different Potting Media on Rhizome Bud Multiplication of Turmeric (*Curcuma longa* L.) under *Ex Vitro* Conditions

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### Abstract

Turmeric (*Curcuma longa* L.) is a rhizomatous herb and belongs to the family of Zingiberaceae. The experiment was conducted to study the effect of different potting media on rhizome bud multiplication of turmeric for vegetative propagation in a net house. The potting media such as sand alone (T1- control), sand: compost at a ratio (v/v) of 1:1 (T2), sand: paddy husk at a ratio of 1:1 (T3) and sand: compost: coir dust at a ratio of 1:1:1 (T4) were used for the study. Uniform size rhizomes of turmeric (variety local) with two buds were planted in different media at 5 cm depth and arranged according to a completely randomized design with three replicates. Length of aerial stem and number of leaves per plant were recorded at two weeks intervals. At the time of harvesting, number of shoot buds per rhizome, chlorophyll content, rhizome length, fresh and dry weights of aerial stem and rhizome were measured and data were statistically analyzed. The results indicated that different potting media had significant ( $p < 0.05$ ) effect on shoot bud multiplication, chlorophyll content and also fresh weights of aerial stem and rhizome of turmeric grown under *ex vitro* conditions. Among the tested treatments, maximum number of shoot buds (5.7) was recorded in T3 and there was no significant difference between T1 and T3. It may be due to the high amount of potassium content in T3 potting medium than other treatments. It was noted that T2 showed the highest fresh weights of aerial stem (8.2 g) and rhizome (9.7 g) followed by T3 and T4 whereas the control (T1) had significantly ( $p < 0.05$ ) the lowest values than other treatments. T2, T3 and T4 treatments showed significantly greater values than the control for all measured parameters except the number of shoot buds. For the most of the parameters tested, there were no significant differences among T2, T3 and T4 treatments. However, usage of paddy husk with sand as an ingredient in potting medium preparation would improve the bud multiplication of turmeric by rhizomes.

**Keywords:** Coir dust, Compost, Paddy husk, Rhizome bud, Sand, Turmeric

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