T2-P5

Production of Zerumbone from *in vitro* Derived Rhizome of *Zingiber zerumbet*. for Pharmaceutical and Cosmeceutical Industry

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An efficient micropropagation protocol for high yield production of rhizomes of *Zingiber zerumbet* (lempoyang) was developed. *Z.zerumbet* is known to produce of a number of secondary metabolites with potential applications in healthcare, pharmaceutical and cosmaceutical industries. Tissue culture technique has enabled the production of abundant planting materials for the production of plant biochemicals of which one such compound is zerumbone. Zerumbone is used in skin whitening formulas and anti microbial properties. Using young vegetative buds from sprouted rhizomes of *Z.zerumbet*, an *in vitro* direct regeneration protocol was developed. Small and active buds of the rhizomes were cultured on MS basal medium for shoot initiation over the duration of four (4) weeks. These shoots were subsequently transferred to MS medium supplemented with BAP and allowed to multiply for six (6) weeks. Shoots were then rooted on MS basal medium augmented with BAP and activated charcoal solidified with gelrite. Following acclimatization, the *in vitro* plants obtained were transferred to the field where key parameters were assessed after twelve (12) months. The data showed that tissue culture derived ginger plants were more vigorous in their growth, as shown in the higher rhizome yield when compared to conventionally propagated plants. The solvent extracts from the tissue culture derived plants and cultivated rhizomes were analyzed using capillary GC and GC-MS. The comparison showed a comparable amount of zerumbone in these extracts.