

## Xanthorrhizol Production from Cultivated and *In Vitro* Derived Rhizome of *Curcuma xanthorrhiza* Roxb.

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### ABSTRACT

Xanthorrhizol is a major compound from *Curcuma xanthorrhiza* (temulawak) which has potential applications in healthcare, pharmaceutical and cosmeceutical industries. Tissue culture technique has provided an alternative method for the production of phytochemicals.

A protocol was developed for *in vitro* direct regeneration using young actively growing vegetative buds from sprouted rhizomes of *C. xanthorrhiza*. Shoots were initiated on MS basal medium for 4 weeks. These shoots were then multiplied on MS medium supplemented with BAP for 6 weeks and rooted on MS basal medium augmented with BAP, NAA and activated solidified charcoal. *In vitro* plants were acclimatized and transferred to the field to maturity after 12 months. Tissue culture derived plants were found to be more vigorous in comparison to the conventionally propagated plants producing higher rhizome yield and comparable production of xanthorrhizol.

Xanthorrhizol was extracted from cultivated rhizome and *in vitro* derived rhizomes using solvent extraction method. Gas chromatographic analysis revealed the presence of xanthorrhizol in all materials tested in comparable amounts.