

**Response of Three Promising Lines of
Curcuma xanthorrhiza Roxb
on Organic and Inorganic Fertilizer Applications**

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ABSTRACT

Productivity of Temulawak (*Curcuma xanthorrhiza* Roxb) is influenced by fertilizer application. The objective of the research was to find out the effect of organic and inorganic fertilizers on productivity and quality of three promising lines of temulawak. The research was conducted at Sukamulya Research Station from November 2005 until December 2006. The experiment was done in a Split Plot Design with 4 replications. Main plots were application of organic and inorganic fertilizers, while the sub plot were three promising lines of temulawak (Balitro-1-3). For main plots, composition of organic fertilizer applied were 10 tons bokashi + 90 kgs bio fertilizer + 300 kgs zeolit + 300 kgs rock phosphate per ha, while organic fertilizer tested were 20 tons dung manure + 200 kgs Urea + 200 kgs SP36 + 200 kgs KCL per ha. The results showed that three promising lines gave significantly higher rhizome production on inorganic fertilizer treatment (21.02 t/ha), compared with organic fertilizer (16.29 t/ha). Rhizomes production of Balitro-1, Balitro-2 and Balitro-3 on organic fertilizer were 15.83, 15.20, and 17.83 t/ha respectively, while production of rhizomes of those promising lines in inorganic fertilizer were 19.64, 22.31, and 21.11 t/ha consecutively. The yield of essential oil, curcuminoid and extract of Balitro-2 on inorganic fertilizer was also higher than Balitro-1 and Balitro-3. It was assumed that Balitro-2 was more responsive for inorganic fertilizer. The yield of rhizomes, essential oil, curcuminoid, xanthorrhizol and extract of Balitro-3 on organic fertilizer was higher than Balitro-1 and Balitro-2. Genotype Balitro 3 was more responsive to organic fertilizer. Almost all of quality parameters observed were comply with national standards Materia Medika Indonesia. The observation also revealed two diseases associated with three promising lines tested, they were nematodes *Radopholus spp.* and bacterial wilt caused by *Ralstonia solanacearum*.

Key words: Temulawak, Curcuma xanthorrhiza Roxb, production, quality, fertilizer application, LEISA.