

**Agus Muji Santoso, 2012, The Effects Elicitors of *Saccharomyces cerevisiae* Extract and CuSO<sub>4</sub> to Biomass, Protein Profile, and Saponin Content of *Talinum paniculatum* (Jacq) Gaertn Callus, this Thesis Under The Supervisors of Dr. Y. Sri Wulan Manuhara, M.Si., and Dr. Alfinda Novi Kristanti, DEA., Department of Biology, Faculty of Science and Technology, Airlangga University, Surabaya.**

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## ABSTRACT

The objectives of this research were to investigate the effects of biotic elicitor by using *S. cerevisiae* and CuSO<sub>4</sub> as abiotic elicitor to produce saponin of *T. paniculatum* Gaertn callus. Young leaves were planted in *Murashige and Skoog* (MS) medium which supplemented with 1 mg L<sup>-1</sup> 2,4-D and 1 mg L<sup>-1</sup> kinetin. Elicitation has been done by induction callus phase in solid MS medium which added *S. cerevisiae* extract in various concentrations (0; 0,025; 0,05, and 0,1% w/v) and CuSO<sub>4</sub> was added also in various concentrations (1, 3, 5, 7 mg L<sup>-1</sup>). The callus morphology, biomass, protein profile, total saponins, and steroides saponins data were recorded after 6 weeks. The results were shown that: most of callus has white friable structure at first time, but callus be russet after three weeks. After that, callus became as white friable structure again (fourth weeks) and then change to be brown color; the addition of 0,05% of *S. cerevisiae* extract given the best fresh and dry weight but the optimal of total saponin content can be enhanced at 0,1%. On the other of hand, control treatment can provided the lowest steroides saponin content. Elicitation by 0,1% *S. cerevisiae* extract can induced higher total protein content of callus and the lower at 0,025%. Elicitation by using CuSO<sub>4</sub> at 5 mgL<sup>-1</sup> can enhanced either fresh or dry weigh callus biomass. In order to increase total saponin of callus can be encreased at 7 mgL<sup>-1</sup> but the higher steroides saponin callus content can be found at control. Total protein of callus at 0,1% treatment has provided the higher result, but the lower total protein can be found at control.

***Key words : biomass, callus, Talinum paniculatum, total protein, total saponins.***