



## Quantity essential oil from rose callus leaf (*Rosa hybrid L. variety Hybride tea purple*): Results of light elicitation

Ribkahwati<sup>1\*</sup>, Hery Purnobasuki<sup>2</sup>, Isnaeni<sup>3</sup> and Edy Setiti Wida Utami<sup>2</sup>

<sup>1</sup>Faculty of Agriculture, University of Wijaya Kusuma Surabaya

<sup>2</sup>Faculty of Science and Technology, Airlangga University

<sup>3</sup>Faculty of Pharmacy, University of Airlangga

---

### ABSTRACT

Essential oil from rose petals roses are very small, the average ranged from 0.01 to 10.0%. Local Americana beauty red roses and roses Holand from Cipanas contains oil rose about 0.08 to 0.14%, with citronellol 27.23 % and geraniol 16.18%, in East Java (Batu) content of local *Rosa hybrida* varieties *Hybride Tea purple* containing  $\beta$ -citronellol 21.07 % and Geraniol 0.18 % In Indonesia, produce rose essential oil is low, compared rose essential oil of Kashmir and Bulgarian. The essential rose oil research try to improve the callus of rose leaf with elicitation abiotic. This Research of essential oil in rose leaf callus induced by elicitor Long exposures (0 hours / day, 12 hours / day and 24 hours / day) and light intensity (1200 Lux and 2400 Lux). Formation of the results obtained Geraniol need light. The content is highest Citronellol in the dark treatment

**Keywords:** abiotic elicitor, callus, citronellol and geraniol

---

### INTRODUCTION

Rose essential oil is a vegetable oil that produces a distinctive fragrant. In Indonesia, grown roses from the Netherlands, the varieties of *Hybride tea* [4]. Extraction of essential rose oil has been done through the process of distillation from rose petals. The essential rose oil made up of 75 % is composed dominant about geraniol and citronellol then 25 % rose champor, the containing compounds nerol, linalool, phenyl ethyl alcohol, farnesol, stearoptene,  $\alpha$ -pinene,  $\beta$ -pinene,  $\alpha$ -terpinene, limonene, p-cymene, Camphene,  $\beta$ -caryophyllene, neral, citronellyl acetate, geranyl acetate, neryl acetate, eugenol, methyl eugenol, rose oxide,  $\alpha$ -damascenone,  $\beta$ -damascenone, benzaldehyde, benzyl alcohol, rhodinyl acetate and phenyl ethyl formate [14].

The local red roses from Cipanas West Java contains geraniol 27.23 % and citronellol 16.18 % [14]. Preliminary research on the oil content of rose petals local varieties of *tea Hybride* contained in three locations Batu East Java with 5 varieties: *Hybride white tea*, *Hybride yellow tea*, *Hybride rose tea*, *Hybride red tea* and *Hybride purple tea*. Only one location in the village Sidorame with *purple tea* varieties *Hybride* containing citronellol and geraniol. Ingredients obtained: citronellol (21.73%) and geraniol (0.18%) [7]. The problem is there is oil content rose in Indonesia is very low when compared to the industry standard rose essential oil in Turkey. The content of *Rosa damascena* Mill citronellol was 35.1%. and 17.9% geraniol [2][12].