

## ABSTRACT

### INFLUENCE OF LIGHT INTENSITY AND RATE OF PHYSIOLOGIC MATURE LEAF AGE ON PHOTOSYNTHESIS RATE OF 36 JATI (*Tectona grandis* L.f.) CLONES

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Photosynthesis is a process controlled by genetic and environmental factor. The factors relate each other to determine quality and quantity of plant growth. Genetic factor influence photosynthesis consists of physiologic mature leaf age, chlorophyll, and stomata. Environmental factor influencing photosynthesis is, among others, light intensity and insects. This study aims to comprehend the extent of the factor influence photosynthesis that ultimately influences growth.

Method used to measure photosynthesis rate was volumetric method, that is, by measuring the measured CO<sub>2</sub> volume. Measurement chlorophyll content was conducted by photochemistry, while stomata observation by method of molding upper epidermis layer.

The result showed that physiologic mature leaf age, chlorophyll, and stomata have great influence on photosynthesis rate of jati. Light intensity factor also influence on photosynthesis rate. The higher light intensity the higher photosynthesis rate. Insect, in form of jati caterpillar (*Hybaea puera* cr.) caused the decreased jati growth to 11.73% through its effect on photosynthesis.

Key words: photosynthesis, jati caterpillar (*Hybaea puera* cr.), growth

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