Diena Ahsana, 2011, Diversity of variety and fenetic relationship at teak plant (*Tectona grandis* Linn.) by phenomenological of morphology in permanent seed garden, Kedungpring, Lamongan. This study was supervised by Dr. Hamidah and Dra. Thin Soedarti, CESA. Departement of Biology, Faculty of Science and Technology, Airlangga University, Surabaya.

ABSTRACT

This research aims using to know diversity of variety in *Tectona grandis* Linn. species by phenomenological of morphology and to know fenetic relationship between variety in species of *Tectona grandis* Linn. by phenomenological of morphology. The research was held in Kebun Bibit Permanen, Kedungpring, Lamongan. In this research, there were 11 provenances of teak plant (*Tectona grandis* Linn.), those were *T. grandis* klon 1, *T. grandis* klon 2, *T. grandis* klon 4, *T. grandis* klon 6, *T. grandis* klon 9, *T. grandis* klon 10, *T. grandis* klon 11, *T. grandis* klon 12, *T. grandis* klon 21, *T. grandis* klon 96, and *T. grandis* Thailand. 35 characters of morphological plant (habitus, stalk and leaf) were used in this research. This research belongs to observational research, that is morphological characters observation towards 11 provenances of *T. grandis* Linn. with 3 replications of each provenance. Data were quantitied then analyzed using SPSS 16 (so it produce a similarity matrix table and dendogram) and *Principal Component Analysis* (PCA). PCA was used to know which characters that influenced of fenetic relationship. Besides, to distinctive 11 provenances of *T. grandis* Linn., description of plant using differential and diagnostic differential have done. The result showed that, there were 11 varieties of *T. grandis* Linn. based on dendogram, they were *T. grandis* klon 1, *T. grandis* klon 2, *T. grandis* klon 4, *T. grandis* klon 6, *T. grandis* klon 9, *T. grandis* klon 10, *T. grandis* klon 11, *T. grandis* klon 12, *T. grandis* klon 21, *T. grandis* klon 96, and *T. grandis* Thailand. Fenetic relationship was seen at first cluster of 33 teak plants that consist of 2 big groups, there were A group (*T. grandis* klon 9, *T. grandis* klon 10, *T. grandis* klon 21, *T. grandis* klon 96, *T. grandis* klon 11, and *T. grandis* Thailand) and B group (*T. grandis* klon 2, *T. grandis* klon 4, *T. grandis* klon 12, *T. grandis* klon 6, and *T. grandis* klon 1) with similarity number 55,9.

Key words: Diversity of variety, fenetic relationship, teak, *Tectona grandis*, phenomenological of morphology.