

# Genetics Diversity Analysis of Durian Landraces in Serang Regency base on Morphological and Isozymes Characters

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## Abstract

Serang regency was known has high diversity of Durian (*Durio zibethinus* Murr.) landraces. In order to elucidate the genetics variability of the diversity, eighteen landraces from four locations were subjected to morphological studies and isoenzymes analysis. The obtained data were analyzed for genetics relationship among landraces base on morphological and isoenzymes characters and compatibility between morphological and isoenzymes characters. Base on fourteen morphological characters there were 54 % of dissimilarity level indicates medium morphological variability. Isoenzymes analysis by using 7 proteins resulted 39 bands, and genetics variability of evaluated trees was 93 % of dissimilarity level. The concurrence analysis on morphological and isoenzymes analysis result, showed the very weak Rohlf correlation value ( $r=0,074$ ). This result was indicated that grouping of durian landraces should be using joint of morphological and isozyme analysis. Joint morphological-isozyme cluster analysis showed that genetics variability among evaluated trees were 60 % of dissimilarity level, and at 53 % level dissimilarity, the durian landraces in Serang Regency should be classified into three groups i.e., 1) Seureuh, Sawah, Pedes, Tolaksana, Potret, Rampayak, Onder, Belu, (2) Balingbing, TM, Paok, Maslay, Emas, Puso, Liter, and 3) Montong, Chanee, and Camat.

**Keywords:** Durian (*Durio zibethinus* Murr.), isozyme analysis, genetics diversity.

## INTRODUCTION

Southeast Asia was believed as center of origin of durian (*Durio zibethinus* Murr.), and Borneo Island stated as distribution center (Morton, 1987), subsequently from Borneo Island durians were distributed to other region of Southeast Asia, including Java Island, and domesticated and selected in throughout Southeast Asia. As center of Indonesia has very high variability in durian, and very useful for breeding development, so far Ministry of Agriculture of Indonesia has released 37 cultivated variety of durian.

Serang regency located in north coast of West Java reported as production center of durian, with very high variability in term of morphological character as well as fruit characters. In Serang regency has acknowledged several durian landraces Potret, Kadu, Sawah and Maslay with specific advantage as taste, flavors, flesh color and flesh thickness. In addition the genetics variability of durian landraces are shown from other morphological characters, as tree architecture, leave shape, leave size and fruit shape.

Genetics variability is a source for crop improvement, and information on genetics diversity and its distribution on the population are very important for breeding program (Thormann and Osborn, 1992; Lee M. 1995). Unfortunately genetics variability of durian in Indonesia, in general, and particularly in Serang regency are not well identified yet, since exploration and recording of durian germplasm still lack behind, subsequently nomenclature and clustering of durian mostly using fruit characters that vulnerable to environmental and climatic change. In order to develop date base on genetics variability on durian landraces in Serang regency, exploration and identification of potential landraces has been conducted. The collected information will be useful for breeding program of durian as genetic