Summary

SRI WAHYUNI. Identification of growing site (bonita) using the non metric digital image having 20 cm spatial resolution in KPH Madiun Perhutani Unit II, East Java. Report. Forest Management, Bogor Agricultural University. Supervised by I NENGAR SURATI JAYA.

The quality of growing site is a measure of soil fertility that closely correlated with the stand productivity, while “bonita” is an index of site quality for teak stand. The determination of bonita is computed on the basis of the relationship between the average of the highest trees and the age of stand. The determination of side index of jati (bonita) on the basis of the upperheight of stand trees was developed by H.E. Wolff von Wolffing and implemented since 1932. The upperheight is an average of 100 tallest trees height in one hectare. This upperheight then correlated with the age of trees in a such way so side index curve is perfomed.

A teak site index (bonita) will not change in a relatively long period and need a quite long periode to revise it. To revise the bonita using conventional method is usually time consuming and costly. For the above reasons, it is require to develop an efficient method for bonita evaluation using the technology of remote sensing. The objective of this study is to identify the stand variables that measurable on the image for bonita determination, and to evaluate the accuracy of existing bonita map, of teak stand.

This research was done in KPH Madiun Perhutani Unit II, East Java using the non metric digital image having 20 cm spatial resolution which acquired in April 2011. The site index identification was done on the basis of visual interpretation of crown density (C), crown diameters (D), and number of trees (N). The design of sampling was designed using IHMB Jaya Version 6 extension. The statistical analysis performed includes correlation analysis, accuracy assessment using upperheight, discriminant analyses bonita on stand variables measured on the image. The hardware used was a computer with ArcView 3.2, Erdas Image 9.1 and Minitab 14 softwares.

This research found that crown density (C), crown diameter (D) as well as number of trees (N) can be used to assis the teak site index (bonita) having accuracy 68.4% for BKPH Dagangan and 81.6% for BPKH Dungus. This study found that the coincidence value between bonita measured on the basis ground measurement and the existing bonita map in quite low, i.e, 29% for BPKH Dagangan and 23% for BPKH Dungus. This study also shows that the bonita could be evaluated periodically during certain period. The high resolution digital non metric image could be used for revising the site index periodically.

Keyword : Bonita (site index), upperheight, teak (Tectona grandis L.f), high resolution non metric digital image, remote sensing technology.