Solar Radiation in Agro-Forestry System

Abstrak

Quantitative information about solar radiation in agro-forestry system in Indonesia is relatively limited. To study the amount of solar radiation below forest trees stand, a survey based research was conducted from October 2002 to February 2003 in Central Java, Indonesia. The location of the survey were chosen based on the kinds of trees and forests. They were Purwodadi (teak, mahogany and sonokeling production forest), Karanganyar - Purworejo (pines production forest), and Klaten (semolina and yucca as conservation forest). The decrease in the Relative's Irradiation Fraction (RIF) under the trees was found related to the increased of the tree aging, adjusted to the exponential decrease model (RIP=1.25e -0.18 X). The RIP under tree canopy was clearly explained by diameter on the breast height diameter of trunk (DBH) divided by the half of tree row spacing (2D/X+Y) therefore the RIF was formulated as 0.2829 (2D/(X+Y).