

B11 – GROWTH OF MERANTI (*Shorea leprosula*), MAHOGANY (*Swietenia macrophylla*) and JABON (*Anthocephalus cadamba*) IN OIL PALM AGROFORESTRY CONDUCTED BY PT. HUMUSINDO IN JAMBI PROVINCE

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Introduction

PT. Humusindo a small company of oil palm plantation in Jambi Province, tried to plant meranti (*Shorea leprosula*), mahogani (*Swietenia macrophylla*) and jabon (*Anthocephalus cadamba*) between oil palm stands since 2009 in order to optimize the use of space as well as economic benefit. Such integrated planting system in oil palm plantation is very rare in Indonesia, because most of oil palm companies preferred monoculture system. This study aims to evaluate the adaptation capacity of meranti, mahogani, jabon and its impacts to the productivity of oil palm.

Method

Study is conducted from May until August 2014 at PT. Humusindo in Bajubang Sub-district, Batang Hari District, Jambi Province. Growth of trees was measured from samples trees that are planted in 2009 in integrating system in oil palms planted in 2001–2002 (AF1) and 1996–1997 (AF2) with two planting arrangements (intercropping and border plants).

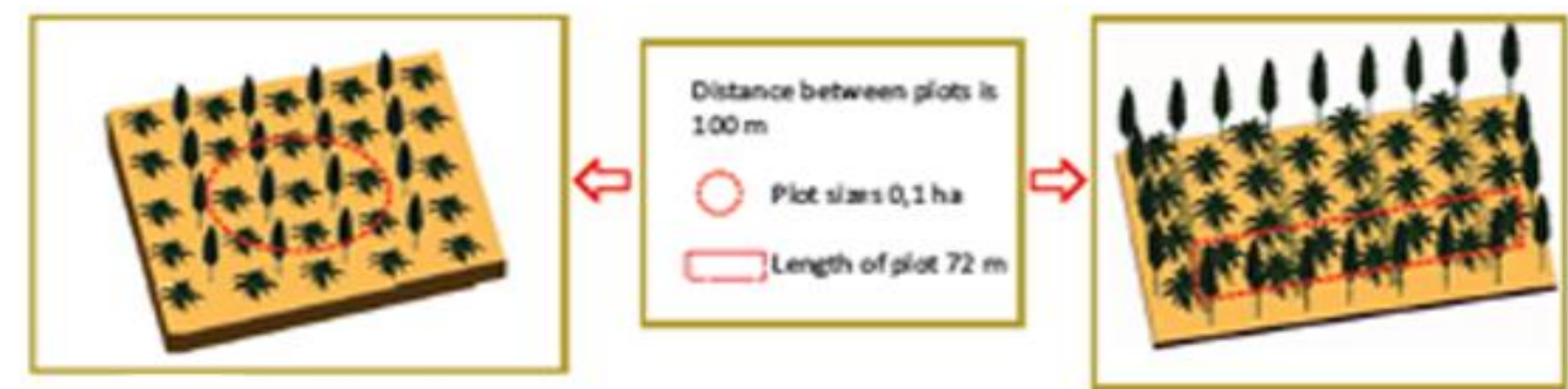


Figure 1: Sample Selection Design

Result and Discussion

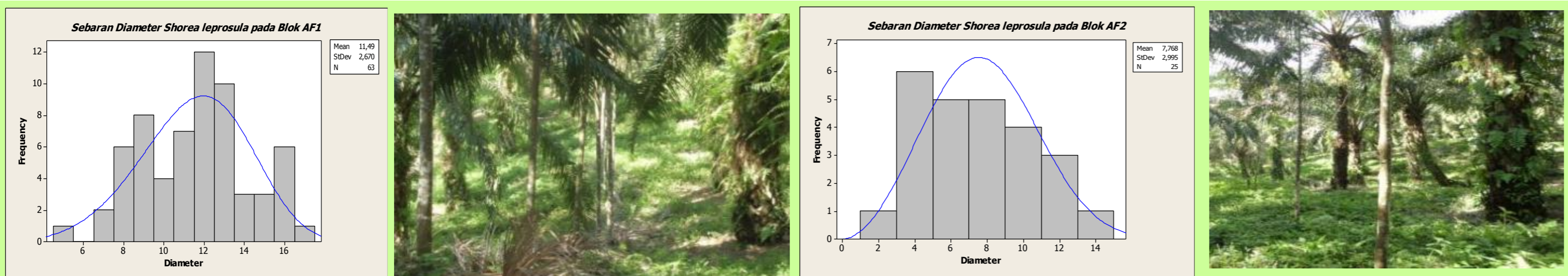


Figure 2: Diameter distribution of *Shorea leprosula* intercropping with oil palms

Average diameter of merantiat sample plots of AF1 (11.49 cm) in PT. Humusindo is higher than the result of similar planting trial by Widiyatno *et al.* (2011) in which at the same age (5 years), meranti only reached diameter in average 9.7 cm.

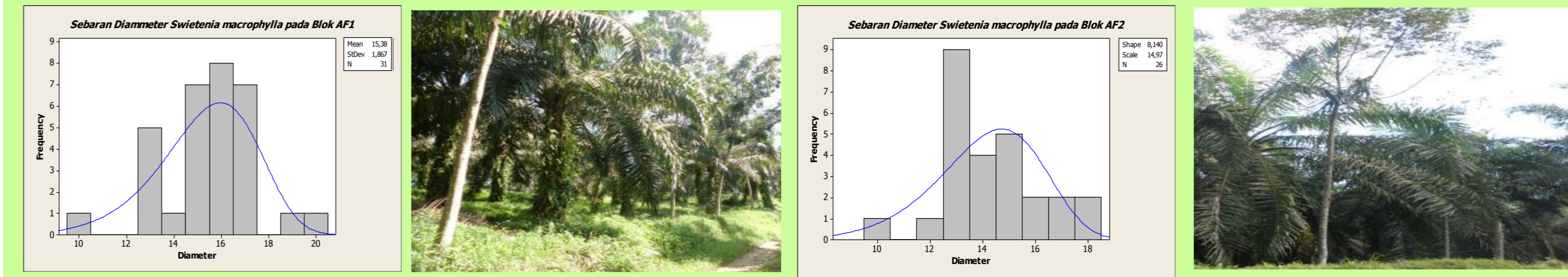


Figure 3: Diameter distribution of mahogany (*Swietenia macrophylla*) planted as border trees at oil palm plantation

Average diameter of mahogany planted at PT. Humusindo (15.4 cm) is almost similar with the similar research conducted by Sabarnurdin *et al.* (2004) which reached between 15–20 cm.

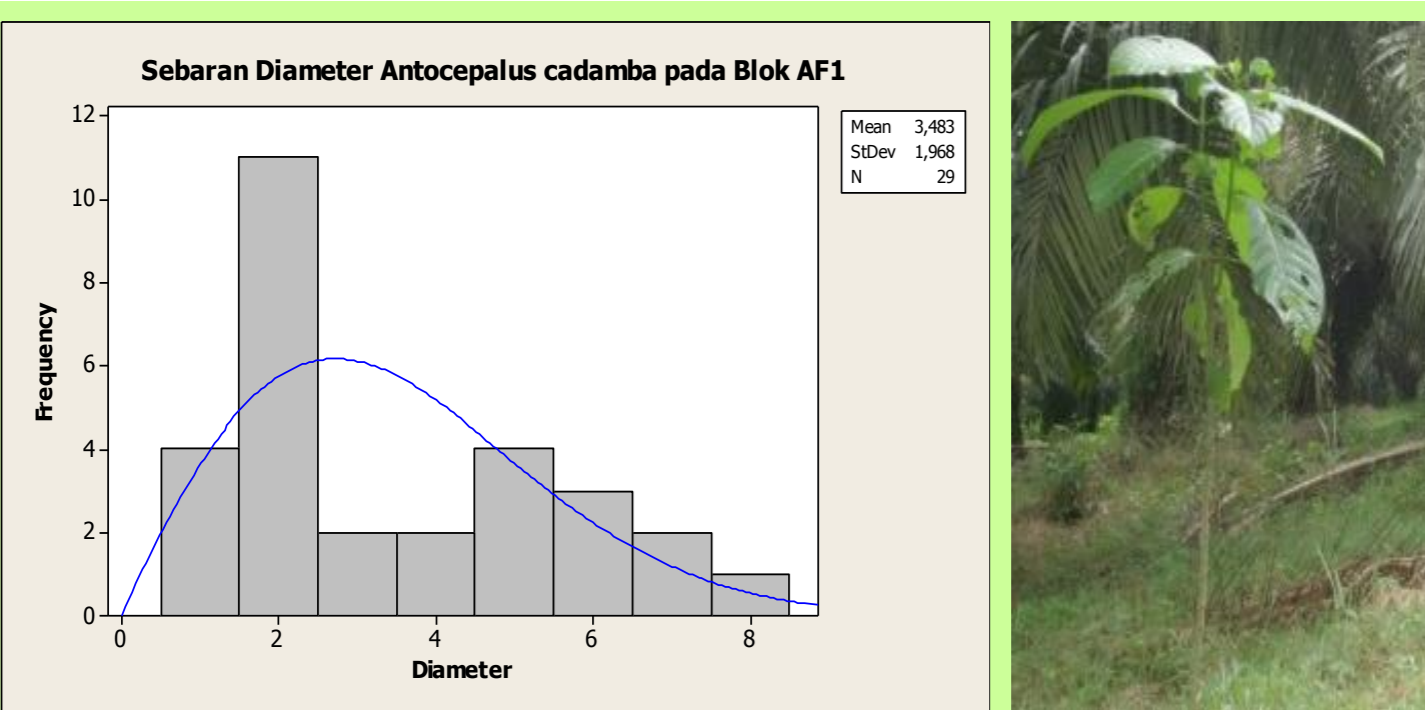


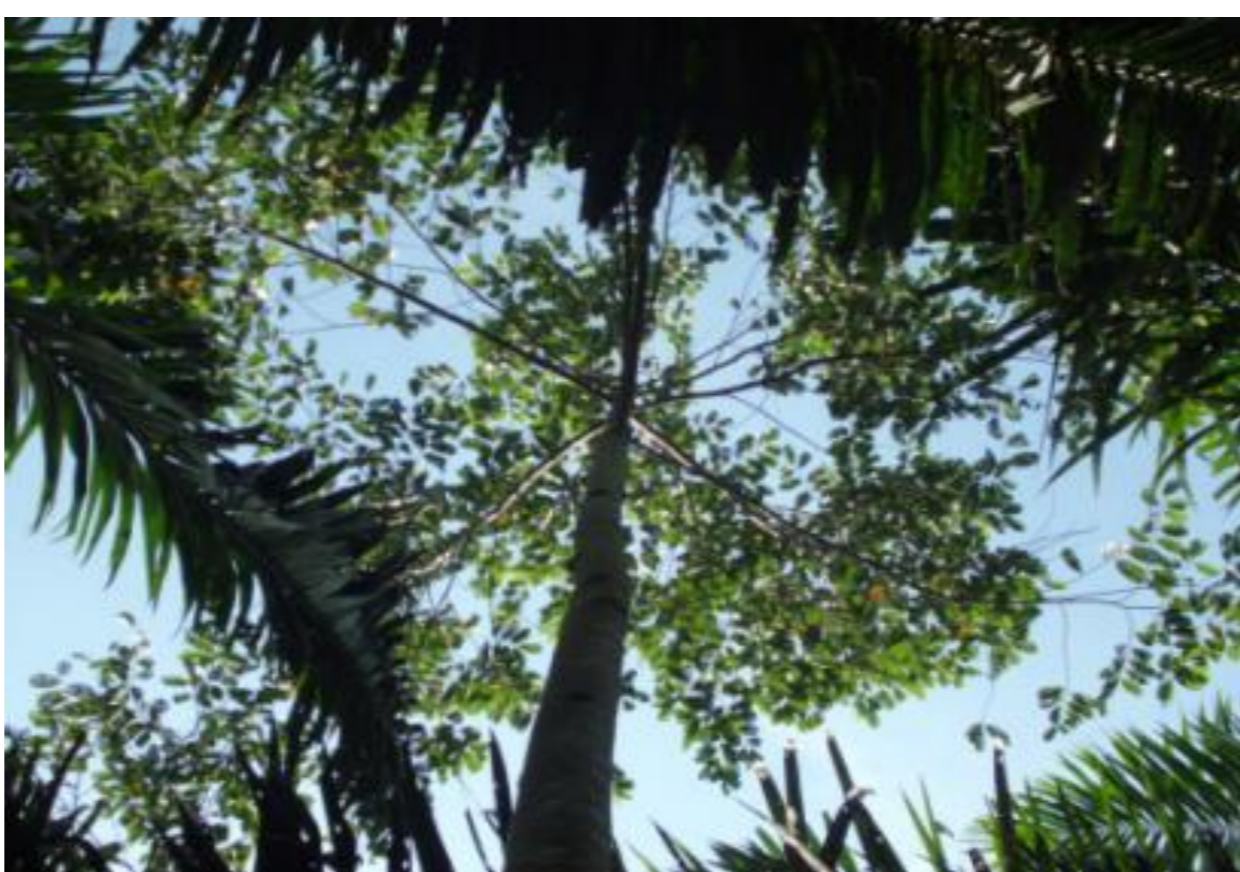
Figure 4: Diameter distribution of *Anthocephalus cadamba* in agroforestry

Figure 4 shows that average diameter of Jabon (3.5 cm) is lower that other research results. Krisnawati *et al.* (2011) stated that average diameter of jabon with the same age with jabon at PT. Humusindo reached about 6.0–16.4 cm with maximum diameter 25.3 cm.

Jabon is not suitable to be planted at oil palm plantation of PT. Humusindo.

Planting system	AF1 (kg/tree)	AF2 (kg/tree)
Monoculture	2934.3	2094.4
Agroforestry	4778.0	2626.6 <sup>a</sup>

Average Production of oil palm periode January - April 2014 at agroforestry system in compare with monoculture system at PT. Humusindo



Average crown cover AF1 53%



Average crown cover AF2 67%



Meranti is dead due to

Result of covariant analysis shows that there is no difference of oil palm production between oil palm in monoculture with agroforestry system, especially at sample plots of AF2

CONCLUSION

Result of normality test using Shapiro-Wilk’s Test shows that *Shorea leprosula* dan *Swietenia macrophylla* have normal distribution growth, while *Anthocephalus cadamba* shown an abnormality. Meranti could grow well in oil palm agroforestry system at PT. Humusindo because they get the benefits from the intensively maintain of oil palms which are grown in the same area. The difference of tree growth at sample plots of AF1 and AF2 is assumed due to the difference of crown cover density and crown thinning of oil palm for oil palm plant maintainance.

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Literature

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