Research projects of counterparts funded at UNJA

Name	Counterpart	Title
Jauhar Khabibi, Noor Farikhah and Mark Maraun	**B13**	Characteristic of wood durability and wood destroyer organism in oil palm plantation, rubber plantation and natural forest in Jambi province

Objectives of the study

The objectives of this study were (1) to analyze the wood characteristics from oil palm agroforestry, rubber agroforestry, and secondary natural forest and, (2) to assess the diversity of termites as wood decaying organisms in these three ecosystem types.

Material and Methods

Fagraea fragrans Roxb. wood was collected in the District of Muaro Jambi, Jambi Province. The solubility of the wood sample was analyzed using four potential solvents: hot water, cold water, ethanol-benzene (1:2), and NaOH 1% (TAPPI T 264 om-88 1988). The proximate analysis included measurements of the moisture content (TAPPI T 264 om-88 1988), volatile matter (ASTM E872-82 1998), ash content (TAPPI T211 om-02 2002), and fixed carbon (Cordero et al. 2001).

Termites were collected from the three ecosystem types using a transect sampling protocol (Jones and Eggleton 2000).

Results and Discussion

Fagraea fragrans wood from the natural forest has higher solubility than wood from the other ecosystem types. The proximate analysis shows that *F. fragrans* wood from the natural forest also has a higher ash content than wood from the other types. Otherwise, there were no significant differences between ecosystem types in the other proximate analysis parameters measured for *F. fragrans* wood (figure 1). The natural forest has more termite diversity than do oil palm plantation and rubber plantation (figure 2).
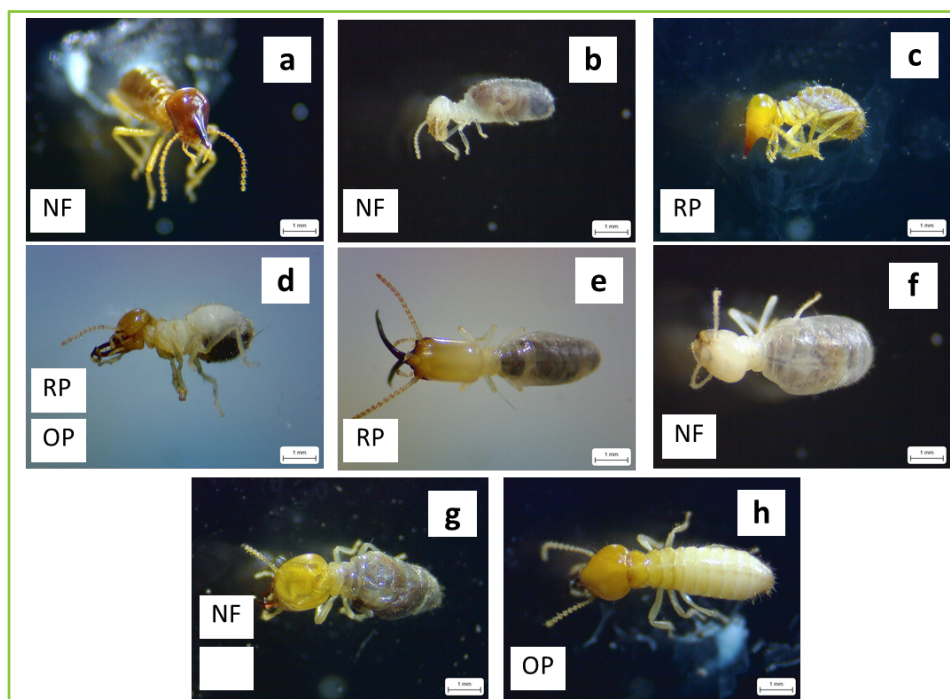

Figure 1. The subfamilies of termites from oil palm plantation (OP), rubber plantation (RP) and natural forest (NF). (1) *Nasutitermitinae*: a. *Bulbitermes*, b. *Hirtitermes* and c. *Nasutitermes*; (2) *Termitinae*: d. *Globitermes* and e. *Termes*; (3) *Macrotermitinae*: f. *Macrotermes* and g. *Microtermes*; (4) *Coptotermitidae*: h. *Coptotermes*.
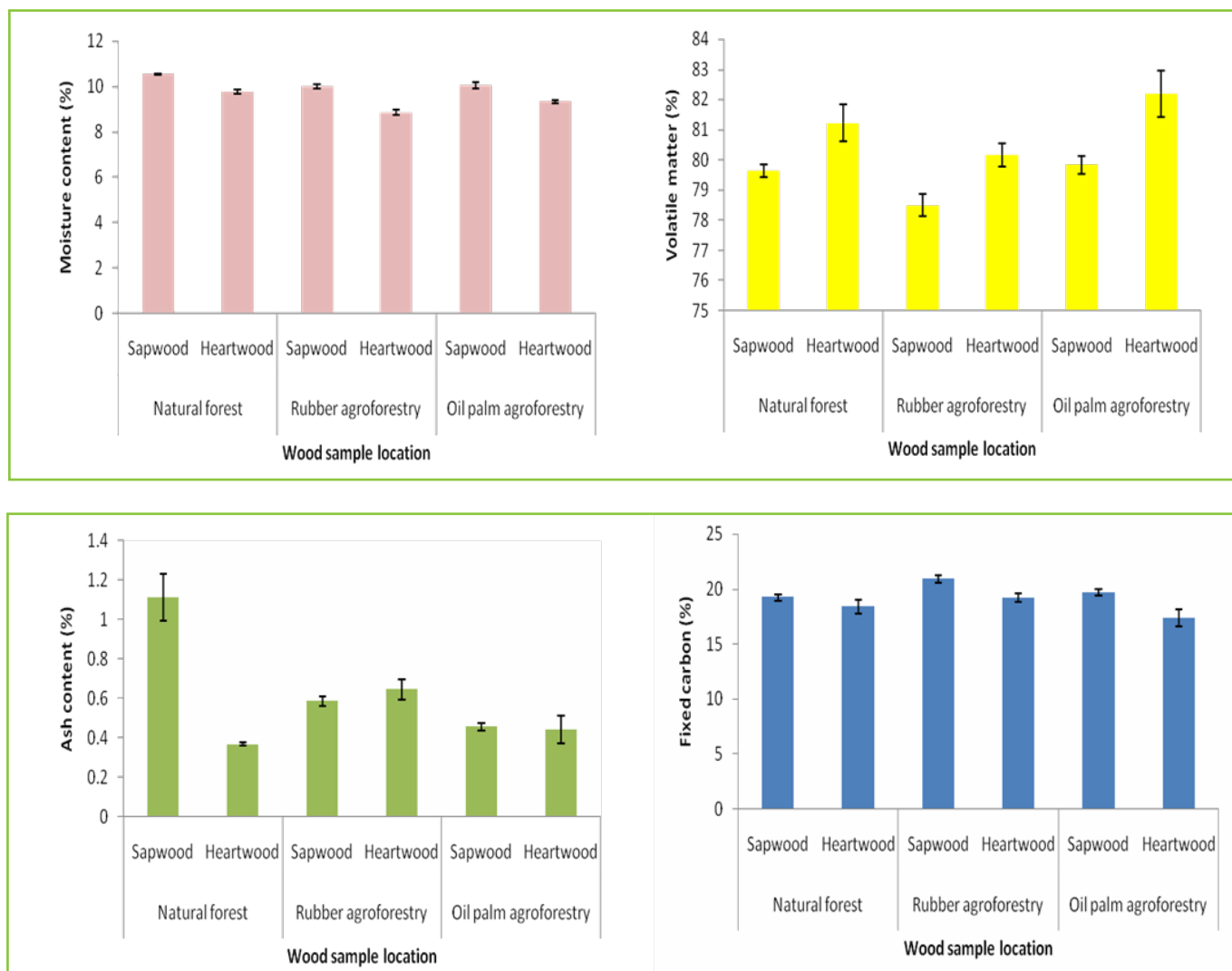
Figure 2. Relationships between wood sample location and the results of the proximate analysis (a) moisture content, (b) volatile matter, (c) ash content, and (d) fixed carbon.