Assessment of micrometeorology at selected age stands in a rehabilitated forest of Sarawak, Malaysia

ABSTRACT

The micrometeorology varies vertically and horizontally from the forest canopy to forest floor. An assessment of the forest micrometeorological is necessary to understand the interaction between the environmental and biological activities, but such information is lacking in rehabilitated forests. The objective of this study was assess the forest floor micrometeorology of selected age stands at a forest rehabilitation project.The study was conducted at a rehabilitated forest in Universiti Putra Malaysia Bintulu Sarawak Campus, Sarawak, Malaysia. Three study plots at(1,10,19-year-old) at the rehabilitated forest sites and a study plot at a natural regenerating secondary forest (± 23-year-old) were established. Davis Vantage Pro2 Weather Station was used to monitor and record micrometeorological variables (i) air temperature (◦C), (ii) relative humidity (%), (iii) heat index (◦C) and (iv) solar radiation (W/m2). Data analyses showed that the micrometeorology inside forests is less extreme and more humid as compared to outside the forests. The micrometeorology among different age stands of rehabilitated forests varies and different which is unique in each study plots as compared to the outside forest. Older rehabilitated forest and natural regenerating secondary forest has less extreme micrometeorological condition as compared to outside forest. The study suggested that the development of the canopy and its layers influence the micrometeorological condition of the forest. The rehabilitated forest has yet to recover in the aspect of the micrometeorology.

Keyword: Micrometeorology; Air temperature; Relative humidity; Heat index; Solar radiation; Forest rehabilitation.