ABSTRACT

BIODIVERSITY OF GREEN SPACE AREA BASED ON INDIGENOUS KNOWLEDGE IN PALANGKA RAYA CITY

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Green space area is about plant setting for ecosystem structure in urban areas. The implementation settlement needs various knowledge or disciplines, one of them is the knowledge about the preferences to plant varieties. Beside the function of green area as air filter, water infiltration, and urban ecosystem balancer, it is hoped it will bring contribution in pressing the global warming effects. The study review about the green space area biodiversity based on the customary or indigenous knowledge in Palangka Raya for the preferences of plant variety has not been committed. The research aims to (a) to obtain the scientific evidences of plants in its ability to absorb carbon dioxide, (b) to achieve the carbon dioxide absorption level of the plant variety, also (c) to obtain the range format and the distribution.

The research location in Palangka Raya city covering 5 districts : Pahandut, Jekan Raya, Bukit Batu, Sebangau and Rakumpit district. The determination of plant variety based on the indigenous knowledge of Dayak tribe who have been living for about 2 until 3 generations in Palangka Raya used the direct interview method. The plant varieties used were the 2-4 months old local and general green space plants. The specific absorption rate of karbon dioxide in plant variety was measured using chamber method at the size 50 x 50 x 30 cm. Carbon dioxide analysis used Gas Cromathography in Agriculture Research Laboratory of Jakenan in Pati, Central Java. Dry weight analysis, percentage and the organic carbon plant content was conducted gravimetrically in the Laboratory of Forestry Product Engineering Concentration, Agriculture Faculty, University of Palangka Raya.

The result of the research indicates the determination of local plants by the Dayak society was based on pamali belief. Most local plants have the higher carbon dioxide specific absorption rate than the general green space plants. The level of carbon dioxide specific absorption rate in plants variety were Pinang Merah (Cyrtostachys lakka Becc.) about 1,37 mg/m²/minute, Serai (Cymbopogon citratus) about 1,35 mg/m²/minute, Pepaya (Carica papaya) about 1,29 mg/m²/minute, Kenanga (Canangium odoratum (Lamk.) Hook. and Thorms. (Lat.)) about 1,22 mg/m²/minute, Bambu Jepang (Dracaena surculosa (Lindl.) about 1,22 mg/m²/minute, Trembesi (Samanea saman (Jacq.) Merr.) about 1,19 mg/m²/minute, Tanjung (Mimusops elengi L.) sebesar 1,11 mg/m²/minute, Pasak Bumi (Eurycoma longifolia Jack.) about 1,10 mg/m²/minute, Mangga (Mangifera indica Lamk.) about 0,88 mg/m²/minute, Rambutan (Nephelium lappaceum L.)
about 0.54 mg/m$^2$/minute, Kelapa Kuning (Cocos eburen) about 0.47 mg/m$^2$/minute and Nangka (Artocarpus heterophyllus Lam.) about 0.43 mg/m$^2$/minute.

The settlement area of green space area in Palangka Raya ranged from Bundaran Besar (central of Palangka Raya city), Mayjen D.I. Panjaitan, Ahmad Yani, Diponegoro, R.T.A. Milono and Adonis Samad Streets. The implementation of localized plant varieties and the distribution were adjusted with the structure and the land use to increase the carbon dioxide specific absorption level were the addition of existing local green space plants, such as Pinang Merah, Serai, Kenanga, Bambu Jepang, Trembesi and Tanjung.

The plant variety based on indigenous knowledge was proven scientifically at its superiority in its carbon dioxide specific absorption rate level. The plant variety, both local and general green space plants, had the fluctuating specific absorption rate characteristic. Therefore, the simultaneous cultivation (biodiversity in such green space area) was able to complete each plant varieties.

*Keywords*: Biodiversity, Green Space Area, Indigenous Knowledge, Carbon Dioxide, Palangka Raya City, General Green Space Plants