INTISARI

Usaha perbaikan dan pengembangan pekarangan merupakan salah satu alternatif untuk mengatasi kendala-kendala dalam pembangunan kehutanan di Indonesia. Usaha tersebut harus dilandasi informasi mengenai komposisi dan struktur vegetasi, tanggapan pertumbuhan dan adaptasi jenis serta interaksinya dengan faktor-faktor lingkungan.

Studi ini bertujuan untuk mengetahui beberapa aspek ekologi pekarangan, terutama masing-masing stratum tajuk pada berbagai ketinggian tempat dari permukaan laut, antara lain : 1) komposisi dan struktur vegetasi pekarangan, 2) pengaruh faktor-faktor lingkungan terhadap komposisi dan struktur vegetasi pekarangan, 3) laju fotosintesis, laju respirasi, dan titik kompensasi cahaya masing-masing jenis, 4) pengaruh faktor-faktor lingkungan terhadap laju fotosintesis, laju respirasi, dan titik kompensasi cahaya.

Penelitian ini meliputi 15 releve yang merupakan kombinasi dari 3 ketinggian tempat dari permukaan laut dan 5 stratum tajuk. Data jumlah individu setiap jenis , laju fotosintesis, laju respirasi, dan titik kompensasi cahaya dianalisis dengan metode ordinasi dua dimensi. Hubungan antara pola pengelompokan releve dengan faktor-faktor lingkungan dipelajari dengan analisis korelasi sederhana. Keanekaragaman jenis diketahui dengan menghitung indeks Shannon.

Hasil penelitian menunjukkan bahwa komposisi vegetasi pada stratum I (< 1 m) didominasi oleh *Zingiber officinale*, *Curcuma domestica*, *Cordyline fruticosa*, *Allium fistulosum*, *Duranta repens*, dan *D. variegata*, stratum II (1-2 m) didominasi oleh *Cordyline fruticosa*, *Manihot utilissima*, *Sauropus androgynus*, *Colocasia esculenta*, dan *Musa paradisiaca*, stratum III (2-5 m) didominasi oleh *Manihot utilissima*, *Musa paradisiaca*, *Carica papaya*, dan *Coffea robusta*, stratum IV (5-10 m) didominasi oleh *Musa paradisiaca*, *Syzygium aromaticum*, *Carica papaya*, *Lansium domesticum*, *Persea americana*, dan *Psidium guajava*, sedang stratum V (> 10 m) didominasi oleh *Cocos nucifera*, *Pangium edule*, *Mangifera odorata*, *Arenga pinnata*, dan *Artocarpus heterophyllus*.

Strata tajuk menunjukkan bahwa semakin tinggi stratum tajuk, semakin rendah jumlah jenis dan jumlah individu per jenis. Laju fotosintesis, laju respirasi dan titik kompensasi rata-rata di setiap srata tajuk menunjukkan adanya perbedaan. Strata tajuk menunjukkan bahwa semakin tinggi stratum tajuk, semakin tinggi laju fotosintesis, laju respirasi, dan titik kompensasi cahaya. Pola pengelompokan releve berdasarkan jumlah individu per jenis, laju fotosintesis, laju respirasi, dan titik kompensasi cahaya lebih ditentukan oleh stratifikasi tajuk. Intensitas cahaya merupakan faktor lingkungan yang paling berpengaruh terhadap pola pengelompokan tersebut. Keanekaragaman jenis di seluruh lokasi penelitian adalah sebesar 4,41. Berdasarkan ketinggian tempat d.p.l., nilainya berkisar 1,27 - 2,29. Berdasarkan strata tajuk, nilainya cenderung semakin menurun dengan semakin tinggi stratum tajuk.

ABSTRACT

Improvement and development of home garden is one of the many alternatives to overcome some of the constraints faced by forestry development in Indonesia. It must be based on the information of vegetation composition and structure, growth response and adaptation of each species, as well as its interaction with environmental factors.

The obejctives of the study were to determine several ecological aspects of home garden, especially on each stratum of the canopy on various altitudes, e.g. : 1) composition and structure of the vegetation, 2) effect of environmental factors, 3) rate of photosynthesis and respiration, and the light compensation point of any species, 4) effect of the environmental factors on the rate of photosynthesis and respiration, and the light compensation point.

There were 15 releves of the research. Those were the combination of three altitudes with five canopy levels. The data of individual amount of each species, photosynthesis rate, respiration rate, and light compensation point were analyzed by using two dimensional ordination method. Relationship between grouping pattern of releves with environmental factors was analyzed by using simple correlation. Species diversity was computed by using Shannon Index.

The results indicated that vegetation composition at stratum I (< 1m) was dominated by *Zingiber officinale*, *Curcuma domestica*, *Cordyline fruticosa*, *Allium fistulosum*, *Duranta repens*, and *D. variegata*, stratum II (1-2 m) was dominated by *Cordyline fruticosa*, *Manihot utilissima*, *Sauropus androgynus*, *Colocasia esculenta*, and *Musa paradisiaca*, stratum III (2-5 m) was dominated by *Manihot utilissima*, *Musa paradisiaca*, *Carica papaya*, and *Coffea robusta*, stratum IV (5-10 m) was dominated by *Musa paradisiaca*, *Syzygium aromaticum*, *Carica papaya*, *Lansium domesticum*, *Persea americana*, and *Psidium guajava*, stratum V (>10 m) was dominated by *Cocos nucifera*, *Pangium edule*, *Mangifera odorata*, *Arenga pinnata*, *Artocarpus heterophyllus*.

The canopy strata indicated that the higher the canopy, the lower the quantity of each individual species. The photosynthesis and respiration rates, as well as the light compensation point on each canopy strata different from each other. The canopy strata indicated that the higher the canopy, the higher the photosythesis rate, respiration rate, and light compensation point. The grouping pattern of releves based on individual quantity of each species, photosynthesis and respiration rate, as well as the compensation point were determined by stratification of canopy. Light intensity was the most influential to the grouping pattern. Diversity index in all of research location was 4.41. Based on altitude, it was between 1.27 to 2.29. Furthermore, based on the strata of the canopy, there was a tendency the diversity decrease if the canopy was higher.