

ABSTRAK

Aya Sofiah Firha Tanawali. Analisis Tutupan Tajuk Pada Sistem Agroforestry Kopi Dataran Tinggi Di Kawasan Hutan Lindung Desa Rappoala Kecamatan Tompobulu Kabupaten Gowa. Dibimbing Oleh Nirwana dan Jauhar Mukti.

Penelitian ini bertujuan untuk mengetahui persentase tutupan tajuk serta menganalisis variasi tutupan tajuk berdasarkan jenis dan kerapatan pohon penaung pada sistem agroforestry kopi di Desa Rappoala, Kecamatan Tompobulu, Kabupaten Gowa. Penelitian dilakukan dengan metode *Hemispherical Photography* pada 15 plot pengamatan berukuran 20 m × 20 m. Sebanyak 240 foto hemisfer dianalisis menggunakan perangkat lunak ImageJ untuk memperoleh data persentase tutupan tajuk. Hasil penelitian menunjukkan bahwa rata-rata tutupan tajuk pada sistem agroforestry kopi di Desa Rappoala adalah 69,76% yang termasuk kategori sedang. Dari total 15 plot, sebanyak 10 plot berada pada kategori sedang dan 5 plot termasuk kategori rapat, sedangkan kategori jarang tidak ditemukan. Variasi tutupan tajuk dipengaruhi oleh kombinasi jenis pohon penaung, yaitu Pola I (satu jenis pohon penaung) dengan rata-rata 66,29%, Pola II (dua jenis pohon penaung) dengan rata-rata 67,88%, dan Pola III (tiga jenis atau lebih) dengan rata-rata 75,12%. Secara umum, tingkat naungan sedang dinilai paling optimal karena mampu menyeimbangkan kebutuhan cahaya untuk fotosintesis dengan perlindungan terhadap panas berlebih, sedangkan naungan rapat menciptakan kondisi iklim mikro yang lebih teduh namun dapat mengurangi intensitas cahaya yang dibutuhkan tanaman kopi.

Kata kunci : Tutupan Tajuk, Agroforestry Kopi, *Hemispherical Photography*, *ImageJ*.

ABSTRACT

Aya Sofiah Firha Tanawali. *Analysis of Canopy Cover in Highland Coffee Agroforestry Systems in the Protected Forest Area of Rappoala Village, Tompobulu District, Gowa Regency Using the Hemispherical Photography Method. Supervised by Nirwana and Jauhar Mukti.*

This study aims to determine the percentage of canopy cover and analyze the variation in canopy cover based on the type and density of shade trees in the coffee agroforestry system in Rappoala Village, Tompobulu District, Gowa Regency. The research was conducted using the Hemispherical Photography method on 15 observation plots measuring 20 m × 20 m. A total of 240 hemispherical photos were analyzed using the ImageJ software to obtain canopy cover percentage data. The results showed that the average canopy cover in the coffee agroforestry system in Rappoala Village was 69.76%, which falls into the moderate category. Out of the 15 plots, 10 plots were categorized as moderate and 5 plots as dense, while no plots fell into the sparse category. Variation in canopy cover was influenced by the combination of shade tree types, namely Pattern I (one type of shade tree) with an average of 66.29%, Pattern II (two types of shade trees) with an average of 67.88%, and Pattern III (three or more types) with an average of 75.12%. In general, moderate shading is considered optimal as it balances the light requirements for photosynthesis with protection against excessive heat, whereas dense shading creates a cooler microclimate but may reduce the light intensity needed by coffee plants.

Keywords : *Canopy Cover, Coffee Agroforestry, Hemispherical Photography, ImageJ.*