

RINGKASAN

Agroforestri kapulaga dinilai menguntungkan secara ekonomi maupun ekologi dalam mendukung pertanian berkelanjutan. Meski demikian produktivitas kapulaga masih rendah karena pola budidaya petani yang bersifat tradisional. Faktor naungan yang merupakan syarat mutlak bagi pertumbuhan kapulaga masih kurang diperhatikan. Kapulaga, oleh petani di tanam di bawah naungan yang sudah ada pada lahan hutan rakyat tanpa mempertimbangkan komposisinya. Penelitian ini bertujuan untuk mengetahui keragaan agronomi kapulaga dalam sistem agroforestri hutan rakyat dengan keberagaman naungannya. Penelitian dilakukan di Desa Purbasari dan Sanguwatang Kecamatan Karangjambu Kabupaten Purbalingga dari Bulan Januari hingga September 2022.

Metode pengambilan sampel menggunakan *multi stage cluster random sampling*. Struktur tanaman penaung menjadi faktor utama dalam sistem agroforestri sehingga ditempatkan sebagai *cluster* dan jenis kapulaga menjadi *sub-cluster*. Struktur tanaman penaung terbagi menjadi 3 *cluster* yaitu C1: albasia, C2: albasia-pisang-singkong dan C3: albasia, mahoni, akasia, afrika, suren, jabon, eukaliptus, pinus, nangka, petai, kelapa, manggis, kopi, pisang dan singkong. *Sub-cluster* merupakan jenis tanaman kapulaga yaitu H: hibrida, M: lokal merah, P: lokal putih. Sampel penelitian berupa unit sampling yang dibuat di dalam *sub-cluster*. Setiap *sub-cluster* diambil 3 unit sampling secara acak sehingga diperoleh 27 unit sampling. Analisis data menggunakan rancangan pola tersarang yaitu jenis kapulaga tersarang dalam struktur tanaman penaung dengan uji lanjut yang digunakan yaitu BNT taraf 5%.

Hasil penelitian menunjukkan variasi sifat kualitatif dan kuantitatif dari batang, daun dan buah kapulaga. Struktur tanaman penaung berpengaruh terhadap tinggi tanaman, bobot brangkasan segar, jumlah dompolan dan hasil panen per rumpun. Jenis kapulaga yang tersarang dalam struktur penaung berpengaruh terhadap karakter tinggi tanaman, luas daun, bobot brangkasan segar, bobot brangkasan kering, bobot 100 buah segar dan bobot 100 buah kering. Hasil panen per rumpun tanaman kapulaga di bawah struktur penaung C1 (albasia), C2 (albasia-pisang-singkong) dan C3 (albasia, mahoni, akasia, afrika, suren, jabon, eukaliptus, pinus, nangka, petai, kelapa, manggis, kopi, pisang dan singkong) masing-masing sebesar 0,596 kg/rumpun, 0,653 kg/rumpun dan 0,351 kg/rumpun. Hasil analisis korelasi menunjukkan bahwa semua variabel pengamatan berkorelasi positif terhadap hasil panen per rumpun dengan variabel yang signifikan yaitu luas daun, jumlah anakan, kehijauan daun, kerapatan stomata, bobot kering brangkasan, jumlah dompolan per rumpun dan jumlah buah per dompol.

SUMMARY

Cardamom agroforestry is economically and ecologically beneficial in supporting sustainable agriculture. However, cardamom productivity is still low due to traditional farmers' cultivation. Shading factor which is an absolute requirement for the growth of cardamom is still less attention. Cardamom, by farmers planted under the existing shade on community forest land without considering its composition. This study aims to determine the agronomic diversity of cardamom in community forest agroforestry systems with a variety of shade. The research was conducted in Purbasari and Sanguwatang Villages, Karangjambu District, Purbalingga Regency from January to September 2022.

The sampling method used multi-stage cluster random sampling. The structure of shade plants is the main factor in the agroforestry system so that it is placed as a cluster and cardamom types become sub-clusters. The structure of the shade plants is divided into 3 three clusters, namely C1: albasia, C2: albasia-banana-cassava and C3: albasia, mahogany, acacia, africa, suren, jabon, eucalyptus, pine, jackfruit, petai, coconut, mangosteen, coffee, banana and cassava. The sub-cluster is a type of cardamom plant, namely H: hybrid, M: local red, P: local white. The research sample is in the form of a sampling unit made in sub-clusters. Each sub-cluster was taken 3 sampling units randomly so that 27 sampling units were obtained. Data analysis used a nested pattern design, the type of cardamom nested in the structure of the shade plant with the advanced test used is BNT level of 5%.

The results showed variations in the qualitative and quantitative properties of cardamom stems, leaves and fruit. The structure of shade plants affects plant height, fresh plant weight, number of seedling and yield per clump. The type of cardamom nested in the shelter structure affected the character of plant height, leaf area, fresh plant weight, dry plant weight, 100 fresh capsule weight and 100 dry capsule weight. Yields per clump of cardamom plants under shelter structures C1 (albasia), C2 (albasia-banana-cassava) and C3 (albasia, mahogany, acacia, africa, suren, jabon, eucalyptus, pine, jackfruit, petai, coconut, mangosteen, coffee, banana and cassava) each of 0.596 kg/clump, 0.653 kg/clump and 0.351 kg/clump. The results of the correlation analysis showed that all observed variables were positively correlated to yield per clump with significant variables namely leaf area, number of tillers, green leaves, stomata density, dry plant weight, number of lumps per clump and number of capsule per bunch.