

RESPON PERTUMBUHAN DAN HASIL NILAM PADA BERBAGAI MODEL TUMPANGSARI DENGAN JAGUNG MANIS

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INTISARI

Setiap tahun produksi minyak nilam semakin menurun dikarenakan minat petani menurun akibat harga minyak yang fluktuatif, dan semakin sempitnya lahan untuk komoditas perkebunan. Dengan kendala tersebut, diperlukan adanya pola bertanam yang lebih efisien. Tujuan penelitian ini adalah untuk mengetahui sistem tumpangsari nilam dan jagung manis terbaik. Penelitian dilaksanakan di lahan pertanian terpadu Lestari Makmur, Argorejo, Sedayu, Bantul. Penelitian ini adalah percobaan faktor tunggal yang dirancang dalam rancangan acak kelompok lengkap dengan 4 taraf perlakuan dan 2 kontrol yang diulang sebanyak tiga kali. Perlakuan terdiri dari 1 baris jagung manis 2 baris nilam, 2 baris jagung manis 1 baris nilam, 1 baris jagung manis 1 baris nilam, 2 baris jagung manis 2 baris nilam. Variabel pengamatan hasil dan pertumbuhan jagung manis meliputi tinggi tanaman, diameter batang, waktu berbunga, bobot kotor dan bersih tongkol, diameter dan panjang tongkol, sedangkan variabel pertumbuhan dan hasil nilam yang diukur adalah pertambahan tinggi dan cabang tanaman, bobot segar dan kandungan minyak atsiri. Selain itu, rasio ekivalensi lahan untuk sistem tumpangsari yang diteliti juga diukur. Data di analisis menggunakan sidik ragam yang dilanjutkan dengan *Duncan's Multiple Range Test* dengan taraf kepercayaan 95%. Berdasarkan sidik ragam, model tumpangsari berpengaruh terhadap pertambahan tinggi dan jumlah cabang, bobot segar tanaman, kandungan minyak atsiri nilam, serta rasio ekivalensi lahan (REL). Kandungan minyak atsiri nilam tertinggi didapatkan pada model tumpangsari 1 baris jagung manis 2 baris nilam. Dibandingkan monokulturnya, model tumpangsari 2 baris jagung manis 2 baris nilam memiliki nilai REL tertinggi. Secara umum, pertumbuhan, bobot segar tanaman, dan kandungan minyak atsiri nilam yang ditanam secara tumpangsari dengan jagung manis lebih rendah dibandingkan pertanaman monokulturnya.

Kata kunci: Model tumpangsari nilam dengan jagung manis, pertumbuhan dan hasil nilam, rasio ekivalensi lahan (REL).

RESPONSE OF PATCHOULI GROWTH AND YIELD IN VARIOUS SWEET CORN-BASED MULTI CROPPING SYSTEM

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ABSTRACT

Driven by unstable price and lesser available land for plantation, farmer's interest in cultivating *Pogostemon cablin* annually decreases resulting reduction in patchouli essential oil production. Therefore, it is necessary to figure more efficient growing method yielding more essential oil as well profit for farmers. The purpose of the study was to discover the best multi-cropping model for *Pogostemon cablin* and sweet corn cultivation. The research was conducted in integrated farm land of Lestari Makmur located in Sedayu, Bantul. The study was a single factorial experiment set in a Randomized Complete Block Design with 4 treatment levels and 3 replications. The treatment consisted of 1 row of sweet corn and 2 rows of patchoul, 2 rows of sweet corn and 1 row of patchouli, 1 row of sweet corn and 1 row of patchouli, 2 rows of sweet corn and patchouli. The observed sweet corn growth and yield variables were plant height, stalk diameter, days of tasselling, gross and net ear weight, ear lenght, ear diameter, and weight of plant biomass. Where as the measured patchouli growth and yield variable were height and branch number increase, plant fresh weight, and content of essential oil. Also, Land equivalent ratio (LER) for the multi-cropping model was observed. The data were then analyzed using ANOVA followed by Duncan's Multiple Range Test (α : 5%). The results show that the multi-cropping treatment affects the plant branch number and height increase, the specimens fresh weight, the essential oil content, as well as land equivalent ratio. According to the data, the multi-cropping model shows lower growth and yield, yet the best LER is obtained in 2 rows of sweet corn and patchouli. The highest essential oil content was obtained by one row of sweet corn mixed by two rows of patchouli. Compared to its monoculture model, multi-cropping model with two rows of sweet corn and combined with two rows of patchouli generates highest LER ratio. Futhermore, the yield and growth of the plants in multi-cropping model is lower than monoculture model

Keywords: Patchouli in sweet corn-based multi cropping model, growth and yield of patchouli, land equivalent ratio.