

RINGKASAN

Melon (*Cucumis melo* L.) merupakan komoditas hortikultura bernilai ekonomi tinggi yang digemari masyarakat karena rasanya yang manis, kandungan gizinya yang tinggi, serta masa tanam yang relatif singkat. Namun, dalam beberapa tahun terakhir, produksi melon di Indonesia mengalami penurunan. Upaya peningkatan produksi melon salah satunya dilakukan melalui pemilihan varietas unggul dan pemanfaatan lahan marginal seperti wilayah pesisir atau dapat menggunakan media pasir pantai. Penelitian ini bertujuan untuk mengetahui pengaruh beberapa varietas melon dan jenis suplemen terhadap pertumbuhan, hasil, dan fisiologi tanaman melon pada media pasir pantai.

Penelitian dilaksanakan pada bulan April–Juli 2025 di *screenhouse* Kebun Percobaan Fakultas Pertanian Universitas Jenderal Soedirman dengan ketinggian 109 mdpl dan suhu rata-rata 22°C–32°C. Rancangan penelitian menggunakan Rancangan Acak Kelompok Lengkap (RAKL) yang terdiri dari dua faktor yaitu varietas dan suplemen. Masing-masing faktor terdiri dari tiga varietas melon (Golden Alisha, Sweet Hami, dan Gracia) dan tiga jenis suplemen (AB-Mix, POC, dan KNO₃) yang ditanam pada media tanam dengan komposisi 15 kg pasir pantai jetis, 0,5 kg pupuk kandang, dan 20 g *trichoderma*. Diperoleh 9 kombinasi perlakuan pada setiap perlakuan varietas dan suplemen. Setiap perlakuan diulang sebanyak 3 kali ulangan, sehingga diperoleh 27 unit percobaan. Satu unit percobaan terdapat 3 tanaman, sehingga jumlah total sebanyak 81 tanaman

Hasil penelitian, varietas Sweet Hami menunjukkan pertumbuhan, fisiologi, dan hasil terbaik pada beberapa variabel pengamatan yaitu tinggi tanaman yang mencapai 211,66 cm, kadar klorofil vegetatif dan generatif sebesar 39,24 µg/ml dan 31,78 µg/ml serta kadar kemanisan tertinggi yaitu 12,67 °brix. Sweet hami hanya lebih rendah dari varietas Gracia pada variabel luas daun. Luas daun Varietas Gracia mencapai 5791,67 cm² sedangkan Sweet Hami hanya 5450,28 cm². Lingkungan *screenhouse* yang homogen menyebabkan banyak variabel pada masa vegetatif tidak berbeda nyata. Pada hasil buah tidak terjadi perbedaan nyata kecuali pada kadar kemanisan. Varietas Sweet Hami memiliki rata-rata kemanisan tertinggi sebesar 12,87 °brix. Jenis suplemen memberikan pengaruh nyata pada fase vegetatif tanaman. Suplemen AB-Mix menghasilkan tanaman tertinggi yaitu 212,13 cm sedangkan KNO₃ mempercepat pembungaan yaitu 12,56 (hst). Namun, tidak ada perbedaan nyata antar jenis suplemen terhadap hasil buah, seperti bobot, volume, diameter, dan kadar kemanisan. Secara umum, varietas Sweet Hami dan pemberian suplemen AB-Mix menunjukkan kombinasi terbaik dalam mendukung pertumbuhan vegetatif dan kualitas buah melon yang ditanam di media pasir pantai.

SUMMARY

Melon (Cucumis melo L.) was a high-value horticultural commodity that had been favored by consumers due to its sweet taste, high nutritional content, and relatively short cultivation period. However, in recent years, melon production in Indonesia had declined. One effort to increase melon production was through the selection of superior cultivars and the utilization of marginal lands such as coastal areas, including the use of beach sand as a growing medium. This study aimed to examine the effects of several melon cultivars and types of supplements on the growth, yield, and physiological characteristics of melon plants cultivated in beach sand media.

The research was conducted from April to July 2025 in a screenhouse at the Experimental Garden of the Faculty of Agriculture, Jenderal Soedirman University, located at an altitude of 109 meters above sea level, with an average temperature ranging from 22°C to 32°C. The experimental design used was a Completely Randomized Block Design (CRBD) with two factors: cultivar and supplement. The cultivar factor consisted of three melon varieties (Golden Alisha, Sweet Hami, and Gracia), and the supplement factor included three types (AB-Mix, POC, and KNO₃). The planting media used consisted of 15 kg of Jetis beach sand, 0.5 kg of manure, and 20 g of trichoderma. A total of nine treatment combinations were applied. Each treatment was replicated three times, resulting in 27 experimental units. Each unit contained three plants, for a total of 81 plants in the study.

The results showed that the Sweet Hami variety demonstrated the best performance in terms of growth, physiology, and yield for several observed variables, including plant height (211.66 cm), vegetative and generative chlorophyll content (39.24 µg/ml and 31.78 µg/ml, respectively), and the highest sweetness level (12.67 °brix). Sweet Hami only performed lower than Gracia in leaf area, with Gracia reaching 5791.67 cm² and Sweet Hami 5450.28 cm². The uniform screenhouse environment caused many vegetative phase variables to show no significant differences. Fruit yield showed no significant difference except in sweetness level, where Sweet Hami had the highest average (12.87 °brix). Supplement type significantly affected vegetative growth; AB-Mix produced the tallest plants (212.13 cm), and KNO₃ accelerated flowering (12.56 days after transplanting). However, there were no significant differences among supplement types in terms of fruit weight, volume, diameter, or sweetness. Overall, the Sweet Hami cultivar combined with AB-Mix supplement showed the best performance in supporting vegetative growth and fruit quality of melon grown on beach sand media.