

RINGKASAN

Amalia Pangestu Yulianingtyas. 0910483046. Pengaruh Komposisi Media Tanam dan Ukuran Bibit pada Pertumbuhan Pembibitan Tebu (*Saccharum officinarum* L.). Di Bawah Bimbingan Dr. Ir. Setyono Yudo Tyasmoro, MS. dan Prof. Dr. Ir. Husni Thamrin Sebayang, MS.

Tebu (*Saccharum officinarum* L.) adalah komoditas penting untuk dijadikan bahan utama pembuatan gula. Dalam produksi gula di Indonesia masih terdapat kendala yang mengakibatkan kebutuhan gula belum bisa terpenuhi. Budidaya tebu melibatkan beberapa faktor produksi termasuk diantaranya adalah penyediaan bibit yang berkualitas. Bibit sebagai bahan tanam sangat menentukan produktivitas hasil dari tebu giling. Agar dapat menghasilkan bibit yang bermutu menyeleksi kemurnian dan kesehatannya, dan memperhatikan kondisi kebun pembibitan. Salah satu faktor yang berpengaruh terhadap hasil pembibitan ialah media tanam. Untuk menekan biaya produksi agar tidak banyak, pemanfaatan limbah dari pabrik gula sangat cocok untuk sebagai media tanam dalam pottray dan meningkatkan pertumbuhan bibit tebu. Sebagai contoh limbah parik gula yang bisa digunakan sebagai media tanam dalam pembibitan tanaman tebu ialah ampas tebu, kompos blotong dan abu ketel. Campuran komposisi media tanam yang tepat dapat mempengaruhi pertumbuhan bibit tebu. Penggunaan komposisi media tanam yang tepat merupakan langkah awal mendorong peningkatan produktivitas gula. Tujuan dari penelitian ini ialah (a). Mengetahui pengaruh ukuran bibit dan komposisi media tanam pada pertumbuhan bibit tebu (*Saccharum officinarum* L.) (b). Mendapatkan komposisi media tanam yang memberikan hasil pertumbuhan bibit tertinggi pada pembibitan tanaman tebu (*Saccharum officinarum* L.). Hipotesis yang diajukan ialah (a). Terdapat interaksi antara komposisi media tanam tebu dengan macam - macam ukuran bibit yang berbeda sehingga dapat mempengaruhi pertumbuhan bibit tanaman tebu, (b) Komposisi media tanam blotong dan bibit bagal berukuran panjang 20 cm dengan 1 mata tunas memberikan hasil terbaik terhadap pertumbuhan bibit tanaman tebu.

Metode yang digunakan dalam penelitian ini adalah Rancangan Petak Terbagi (*Split Plot Design*) dengan petak utama ukuran bibit yaitu (1). Media tanam dengan komposisi perbandingan 1 tanah, 1 pasir dan 1 kompos blotong (M_0), (2). Media tanam dengan komposisi perbandingani 1 tanah, 1 pasir dan 1 ampas tebu (M_1), (3). Media tanam dengan komposisi perbandingan 1 tanah, 1 pasir dan 1 abu ketel (M_2), sedangkan untuk anak petak yaitu ukuran bibit : (1). Bibit bagal berukuran panjang 20 cm dengan 1 mata tunas (S_0), (2). Bibit bagal berukuran panjang 10 cm dengan 1 mata tunas (S_1), (3). Bibit bagal berukuran panjang 5 cm dengan 1 mata tunas (S_2), (4). Bibit budchip berukuran diameter mata bor 2,2 cm (S_3). Pengamatan yang dilakukan adalah non destruktif meliputi tinggi tanaman, jumlah anakan dan jumlah daun. Pengamatan mulai dilakukan pada umur 20, 40, 60, 80. 100 dan 120 hst dan pengamatan destruktif meliputi bobot segar total tanaman dan bobot kering total tanaman. Data pengamatan yang diperoleh dianalisis dengan menggunakan analisis ragam (uji F) pada taraf 5 %. Perbedaan antar perlakuan diuji dengan menggunakan uji BNT pada taraf 5 %. Alat- alat yang digunakan dalam penelitian ini meliputi mesin bor *Prototype*, *Hot Water Treatment*

(HWT), parang, polibag dengan ukuran 50 x 60 cm, kamera, penggaris dan alat tulis. Bahan- bahan yang digunakan antara lain bibit tebu varietas PS 882, komposisi jenis media tanam yaitu pasir, tanah, kompos blotong, ampas tebu dan abu ketel, larutan desinfektan (lysol) dan ZPT (Zat Pengatur Tumbuh). Penelitian dilaksanakan pada bulan Juni – Oktober 2013 di PTPN X Pabrik Gula Tjoekir, Kecamatan Diwek, Jombang.

Hasil dari penelitian menunjukkan terdapat interaksi komposisi media tanam dan ukuran bibit terjadi pada tinggi tanaman, jumlah anakan, diameter batang, luas daun, bobot segar total tanaman dan bobot kering total tanaman. Perbedaan komposisi media tanam dan ukuran bibit berpengaruh terhadap jumlah ruas batang dan jumlah daun. Bibit bagal berukuran panjang 20 cm dengan 1 mata tunas (S0) sangat sesuai ditanam dengan media tanam dengan komposisi 1 tanah, 1 pasir dan 1 kompos blotong (M0) karena sangat berpengaruh meningkatkan pertumbuhan tanaman.



SUMMARY

Amalia Pangestu Yulianingtyas. 0910483046. The Effect of Planting Media Composition and Size of the Seed on the Growth of Sugarcane Seedling (*Saccharum officinarum* L.). Advisor Dr. Ir. Setyono Yudo Tyasmoro, MS. and Prof. Dr. Ir. Husni Thamrin Sebayang, MS.

Sugarcane (*Saccharum officinarum* L.) is commodities that is used as the main ingredient for sugar industry. There are still obstacles which cause unfulfilled demand of sugar in Indonesia's sugar industry. Sugarcane cultivation involves several production factors including the supply of first quality seeds. Seeds as planting material will determine the productivity of sugarcane milling. The first quality seeds are obtained by selecting the seed considering the aspect of decontaminant, health, and nursery condition. One of the factors influences the results of seedling is the planting medium. The utilization of the waste from sugar mills is suitable as the growing medium in pottery with the aim of reducing the production cost and increasing the growth of sugarcane seedling. The example of sugar mill waste that can be used as a growing medium in the nursery plants are sugar cane bagasse, compost filter cake and boiler ash. The precise mixed composition of the planting medium can affect the growth of sugar cane. The use of precise planting medium composition is considered as the first step that support the increasing number of sugar productivity. The purpose of this study is to (a). Determine the effect of the seed size and planting media composition on the growth of sugar cane (*Saccharum officinarum* L.). (b). Obtain the composition of growing medium that yields the highest seed on seedling growth of sugarcane (*Saccharum officinarum* L.). Proposed hypothesis are (a). There is an interaction among the composition of sugarcane planting media with wide-range sizes of the seed so it can affect the growth of sugarcane seedlings. (b). The composition of the growing media in 1 soil, 1 sand, 1 compost, and *bagals* seeds with the length of 20cm gives the best impact on the growth of sugarcane seedlings. The tools that is used in this study include drilling machine Prototype, Hot Water Treatment (HWT), sickle, nursery box with 50 x 50 cm in size, oven, HVS paper, scissors, a camera, a ruler and stationery. The materials used include PS 882 varieties of sugarcane seeds, planting medium composition which is sand, soil, compost filter cake, boiler ash and bagasse, a disinfectant solution (lysol) and ZPT (plant growth regulators).

The method used in this study is a split plot design with the size of the seeds as the main plot, which is (1) Planting media with the composition of 1 soil, 1 sand, and 1 filter cake compost (M_0), (2) Planting media with the composition of 1 soil, 1 sand, and 1 bagasse (M_1), (3) Planting media with the composition of 1 soil, 1 sand, and 1 ash kettle (M_2), moreover for the size of the seeds as the sub-plot : (1) *Bagals* seeds in the length of 20 cm with 1 bud (S_0), (2) *Bagals* seeds in the length of 10 cm with 1 bud (S_1), (3) *Bagal* seeds in the length of 5 cm with 1 bud (S_2), (4) Bud chip seeds with the drill diameter of 2.2 cm (S_3). The observation is a non destructive observation which covers plant height, number of tillers and number of leaves. It starts at the age of the plant from 20, 40, 60, 80, 100 and 120 adp and the observation is destructive observation which fresh weight of total plants and dry weight of total plants. The

observation data were analyzed by analysis of variance (F test) in the level of 5 %. The differences between treatments were tested using LSD test in the level of 5%. The tools that is used in this study include drilling machine Prototype, Hot Water Treatment (HWT), sickle, nursery box with 50 x 50 cm in size, oven, HVS paper, scissors, a camera, a ruler and stationery. The materials used include 882 varieties of sugarcane seeds, planting medium composition which is sand, soil, compost filter cake, boiler ash and bagasse, a disinfectant solution (lysol) and ZPT (plant growth regulators). This study had conducted in June – October 2013 in the PTPN X Sugar Factory, Diwek Distric, Jombang.

The results of the study showed that there is an interaction among the composition of planting medium with sizes of the seeds on the height of the plant, number of tillers, number of leaves, diameter of stem, leaf area, fresh weight of total plants and dry weight of total plants. The variation of planting media composition and size of the seeds influence the number of stem and the number of leaf. *Bagals* seeds in the length of 20 cm with 1 bud (S_0) is suitable to be planted in the planting media composition of 1 soil, 1 sand, and 1 filter cake compost (M_0) because it really influences the increasing of plant growth.

