

RINGKASAN

Hendrawan Susilo. 0910480084. Pengaruh Perlakuan Air Panas dan Media Tanam Terhadap Pertumbuhan Bibit Tebu (*Saccharum officinarum L*) Varietas PS 881 Menggunakan Metode Bud Chip. Di bawah bimbingan Dr. Ir. M. Dawam Maghfoer, MS sebagai pembimbing utama dan Dr. Ir. Roedy Sulistyono, MS sebagai Pembimbing Pendamping.

Produktivitas gula nasional di Indonesia masih rendah. Salah satu upaya untuk meningkatkan produksi gula ialah dengan menyediakan bibit tebu unggul dan bermutu dalam jumlah banyak melalui *Single bud planting*. *Single bud planting* memerlukan tahapan *hot water treatment* yang bertujuan untuk menghasilkan bibit yang bebas dari penyakit (sehat), mematahkan dormansi dan mempercepat perkecambahan, meningkatkan bobot tebu dan hablur per hektar. Komposisi media tanam merupakan salah satu factor yang menentukan keberhasilan pembibitan tebu. Media tanam yang sesuai untuk pembibitan ialah gembur, mempunyai aerasi yang baik, porositas tinggi, mampu menahan dan menyediakan air bagi tanaman dan mampu menyediakan unsur hara. Tujuan penelitian ialah untuk mengetahui lama *hot water treatment* dan komposisi media tanam yang sesuai untuk pertumbuhan bibit tebu asal *bud chip*.

Penelitian dilaksanakan di Pusat Penelitian Gula PT. Perkebunan Nusantara X (Persero), Desa Plosokidul, Kecamatan Plosoklaten Kabupaten Kediri pada bulan Mei sampai Juli 2016. Lokasi penelitian terletak pada ketinggian ± 220 meter dpl, jenis tanah Inceptisol, suhu rata-rata $20 - 25^{\circ}\text{C}$, curah hujan 144 mm/bulan dan pH tanah 6,5 – 7. Penelitian menggunakan rancangan acak kelompok faktorial yang terdiri atas 2 faktor dan diulang 3 kali. Faktor pertama ialah lama *hot water treatment* pada 40°C yang terdiri atas $H_1 = 20$ menit, $H_2 = 30$ menit, $H_3 = 40$ menit, faktor kedua ialah komposisi media tanam yang terdiri atas campuran tanah, kompos blotong dan sekam dengan perbandingan $M_1 = 6 : 3 : 1$, $M_2 = 3 : 2 : 1$, $M_3 = 1 : 1 : 1$. Parameter pengamatan meliputi persentase tumbuh, jumlah daun, tinggi, diameter batang, luas daun, bobot segar dan bobot kering bibit tanaman tebu.

Hasil penelitian menunjukkan bahwa tidak terjadi interaksi nyata antara lama *hot water treatment* (HWT) dan komposisi media tanam pada semua parameter pertumbuhan tanaman tebu. Lama *hot water treatment* (HWT) dan komposisi media tanam berpengaruh nyata pada semua parameter pertumbuhan tanaman tebu pada 14 sampai 84 HST. Lama *hot water treatment* selama 20 dan 30 menit (H_1 dan H_2) meningkatkan pertumbuhan bibit tanaman tebu. Campuran media tanam kompos blotong dan sekam dengan proporsi 3 : 2 : 1 (M_2) dan 1 : 1 : 1 (M_3) menghasilkan pertumbuhan bibit tanaman tebu lebih baik dibandingkan proporsi 6 : 3 : 1 (M_1).

Kata Kunci : tebu, *bud chip*, *hot water treatment*, komposisi media tanam

SUMARRY

Hendrawan Susilo. 0910480084. The Effect of Hot Water Treatment and Planting Medium on Sugarcane Seedling growth (*Saccharum officinarum* L) Varietas PS 881 Method Using Bud Chip. Under the guidance of Dr. Ir. M. Dawam Maghfoer, MS as the main Supervisor and Dr. Ir. Roedy Soelistyono, MS as a Supervising Companion.

National sugar productivity in Indonesia is still low. One effort to increase the production of sugarcane is by providing superior quality seeds in large quantities through the single bud planting. Single bud planting requires hot water treatment stage that aims to produce seeds that is free from disease (healthy), breaking the dormancy and accelerate the germination as well as to increase the weight and crystal sugarcane per hectare. The composition of planting media is one among all factors that determines the success of sugarcane nursery. The planting media which is suitable for nursery should loose, have a good aeration, high porosity, able to withstand and provide water as well as nutrients for plants. The aims of this study is to determine the time of the hot water treatment and the composition of planting media which is suitable for growing sugarcane seedling originated from chip bud.

The research was conducted at Sugar Research Centre PT. Perkebunan Nusantara X (Persero), Plosokidul Village, Plosoklaten Subdistrict, Kediri District from May to July 2016. The research location is located at an altitude of ± 220 meters above sea level, the soil type is Inceptisol with the average temperature of 20 - 25⁰C, 144 mm / month rainfall and soil pH 6.5 - 7. This research using factorial randomized block design consisting of two factors with 3 replications. The first factor was the time of hot water treatments at 400 ° C consisting of H1 = 20 minutes, H2 = 30 minutes, H3 = 40 minutes, and the second factor was the planting media composition consist of soil mixture, blotong compost and husk with ratio M1 = 6: 3: 1, M2 = 3: 2: 1, M3 = 1: 1: 1. The parameters for observation including growing percentage, number of leaves, height, stem diameter, leaf area, fresh weight and dry weight of the sugarcane seedling.

The results showed that there was no interaction occurs between the time of hot water treatment (HWT) and planting media composition in all sugarcane crop growth parameters. The time for hot water treatment (HWT) and planting media composition has a significant effect on all sugarcane growth parameters from 14-84 DAP. The time for hot water treatment between 20 until 30 minutes (H1 and H2) increases the growth of the sugarcane seedling. The composition of soil, blotong compost and husk planting media with the proportion of 3: 2: 1 (M2) and 1: 1: 1 (M3) showed sugarcane seedling growth better than the proportion of 6: 3: 1 (M1).

Keywords: sugarcane, bud chips, hot water treatment, planting media composition