

## RINGKASAN

Tanaman stroberi (*Fragaria* sp.) adalah salah satu tanaman buah yang banyak diminati karena bentuk dan rasa buahnya yang khas. Buah stroberi kaya akan kandungan nutrisi di dalamnya dan memiliki banyak khasiat bagi tubuh. Tanaman stroberi tumbuh optimal di daerah yang memiliki ketinggian tempat lebih dari 660 m dpl dengan suhu udara 22-25° C di siang hari dan 14-18° C di malam hari. Kelembaban udara relatif (RH) yang tinggi (85-95%) dibutuhkan tanaman stroberi agar dapat tumbuh dengan baik dan mencegah terjadinya transpirasi berlebih akibat suhu yang tinggi di lingkungan pertanaman (Kurnia, 2005). Permintaan pasar yang tinggi menyebabkan tanaman stroberi membutuhkan teknik budidaya yang meluas, merata dan lebih efektif dengan harapan dapat meningkatkan produksi tanaman baik dari segi kualitas maupun kuantitasnya. Cara yang dapat dilakukan yaitu dengan memanfaatkan lahan di dataran rendah untuk perluasan budidaya stroberi dan penerapan pemupukan yang efektif. Penelitian ini bertujuan untuk mengetahui kemampuan adaptabilitas dari lima genotipe stroberi yang diuji serta mengetahui keragaman responnya pada pemberian beberapa macam pupuk yang ditanam di dataran rendah.

Penelitian dilaksanakan di *Screen House* Fakultas Pertanian Universitas Jenderal Soedirman dengan ketinggian tempat 110 m dpl. Kegiatan penelitian berlangsung sejak bulan April hingga Agustus 2021. Bibit tanaman stroberi yang digunakan berasal dari Desa Pratin Purbalingga. Penelitian menggunakan Rancangan Acak Kelompok (RAK) faktorial dengan dua faktor. Faktor pertama berupa 5 klon stroberi, yaitu klon 1 (G1), klon 2 (G2), klon 3 (G3), klon 4 (G4), dan klon 5 (G5). Faktor kedua adalah macam pupuk yang terdiri dari perlakuan kontrol (P0), pupuk organik kotoran sapi (P1), pupuk fermentasi kedelai (P2), dan pupuk NPK mutiara 16-16-16 (P3). Kedua perlakuan dikombinasikan dan diperoleh 20 kombinasi perlakuan. Pengamatan meliputi pengamatan vegetatif tanaman (tinggi tanaman, jumlah daun, dan kandungan klorofil daun) dan pengamatan generatif tanaman (umur berbunga, jumlah bunga, jumlah buah per tanaman, bobot buah per tanaman, umur panen dan persentase bunga jadi buah). Data pendukung lainnya yang diamati yaitu suhu udara, kelembaban udara dan intensitas cahaya lingkungan pertanaman stroberi. Apabila perlakuan menunjukkan hasil yang signifikan, maka dilanjutkan dengan uji BNJ (Beda Nyata Jujur) dengan taraf 5% untuk mengetahui interaksi dan jenis perlakuan dengan hasil yang terbaik. Pengamatan morfologi tanaman berdasarkan pada panduan Internasional UPOV (*Union for the Protection of New Varieties of Plant*) Geneva.

Hasil penelitian menunjukkan bahwa perlakuan variasi klon tanaman sangat berpengaruh terhadap sebagian besar variabel yang diamati. Perlakuan klon tanaman sangat berpengaruh terhadap rata-rata tinggi tanaman (cm), jumlah bunga (kuntum), jumlah buah per tanaman (buah), bobot buah per tanaman (g), persentase bunga jadi buah (%) dan kandungan klorofil daun (unit). Klon 5 (G5) menghasilkan rata-rata nilai yang terbaik terhadap variabel jumlah bunga (3,68 kuntum), jumlah buah per tanaman (2,57 buah), bobot buah per tanaman (8,53 g)

dan persentase bunga jadi buah (48,46%), kemudian diikuti oleh klon 4 dengan rata-rata jumlah bunga (3,08 kuntum), jumlah buah per tanaman (2,33 buah), bobot buah per tanaman (8,31 g), dan persentase bunga jadi buah (37,71 %). Rata-rata tinggi tanaman terbaik diperoleh pada perlakuan klon 3 dengan nilai 12,53 cm. Rata-rata kandungan klorofil tertinggi diperoleh pada perlakuan klon 4 dengan nilai 38,81 unit. Perlakuan pemberian beberapa macam pupuk sangat berpengaruh terhadap variabel pengamatan jumlah daun (helai) dan kandungan klorofil daun (unit). Perlakuan pupuk terbaik yaitu pupuk NPK mutiara yang menghasilkan rata-rata jumlah daun 8,89 cm dan rata-rata kandungan klorofil 42,08 unit. Berdasarkan hasil pengamatan kedua variabel, terdapat klon yang tidak dapat berbunga ataupun berbuah selama masa penelitian sehingga interaksi antara kedua perlakuan tidak dapat dianalisis. Hasil penelitian didapatkan klon 5 dan klon 4 yang merupakan klon yang paling adaptif terhadap cekaman suhu dan iklim di dataran rendah ditunjukkan dengan respon tanaman yang baik pada beberapa variabel yang diamati yaitu jumlah bunga, jumlah buah per tanaman, bobot buah per tanaman, dan persentase bunga jadi buah dengan hasil yang tidak berbeda antara klon 5 dan klon 4. Perlakuan macam pupuk sangat berpengaruh terhadap jumlah daun dan kandungan klorofil daun. Pupuk NPK mutiara merupakan yang terbaik diantara keempat perlakuan pupuk. Pengamatan karakter kualitatif tanaman stroberi dilakukan dengan cara visual secara langsung pada kelima klon yang diuji dan didasarkan pada acuan International UPOV (*Union For The Protection Of New Varieties Of Plants*) Geneva. Setiap klon yang diuji memiliki karakter masing-masing. Pengamatan karakter kualitatif tanaman stroberi meliputi pengamatan morfologi tanaman, daun, petiol, bunga dan buah stroberi.

## SUMMARY

*Strawberry (Fragaria sp.) is one of the most popular fruit plants because of its distinctive shape and taste. Strawberries are rich in nutrients and nutritious for body health. Strawberry plants grow optimally in areas that have an altitude more than 660 meters above sea level with an air temperature of 22-25 °C during the day and 14-18 °C at night. High relative humidity (85-95%) is needed for strawberry plants to grow well and prevent excessive transpiration due to high temperatures in the cropping environment (Kurnia, 2005). High market demand causes strawberry plants require extensive cultivation techniques, even and more effective to increase crop production in terms of both quality and quantity. Extensive strawberry cultivation that we can do is using land in the lowlands with effective fertilization. This study was aimed to determine the adaptability of the five strawberry genotypes and to determine the diversity of their responses to the application of several kinds of fertilizers planted in the lowlands.*

*The research was conducted at Screen House of Faculty of Agriculture, Jenderal Soedirman University, with an altitude of 110 meters above sea level. Research activities were conducted from April to August 2021. The plant seeds used are from Pratin Purbalingga. The research was conducted using a Randomized Complete Block Design (RCBD) with two factors. The first factor is 5 clones of strawberry, clone 1 (G1), clone 2 (G2), clone 3 (G3), clone 4 (G4), and clone 5 (G5). The second factor is the kinds of fertilizers there are control treatment (P0), organic cow dung fertilizer (P1), soybean fermented fertilizer (P2), and NPK fertilizer 16-16-16 (P3). All treatments were combined and 20 treatment combinations were obtained. Observed variables included vegetative growth (plant height, number of leaves, and leaf chlorophyll content) and generative growth (age of flowering, number of flowers, number of fruit each plant, fruit weight each plant, harvest age and percentage of flowers into fruit). Other supporting data observed were air temperature, humidity and light intensity of crop environment. If the treatment obtained significant results, then followed by Tukey's Honestly Significant Difference (HSD) test with a level of 5% to determine the interaction and type of treatment with the best results. Plant morphology observations based on the International Union for the Protection of New Varieties of Plant (UPOV) Geneva guidelines.*

*The results showed that the treatment of plant clone variations greatly influenced most of the observed variables. The treatment of plant clones greatly influenced the average plant height (cm), number of flowers (buds), number of fruit each plant (fruit), fruit weight each plant (g), percentage of flowers into fruit (%) and leaf chlorophyll content (units). Clone 5 (G5) produced the best average value for the variables of the number of flowers (3.68 buds), the number of fruits each plant (2.57 pieces), fruit weight each plant (8.53 g) and the percentage of flowers into fruit (48.46%), followed by clone 4 with an average number of flowers (3.08 buds), number of fruits each plant (2.33 pieces), fruit weight each*

plant (8.31 g), percentage of flowers into fruit (37.71%). The best average plant height was obtained in the treatment of clone 3 with a value of 12.53 cm. The highest average chlorophyll content was obtained in the treatment of clone 4 with a value of 38.81 units. The treatment of several kinds of fertilizers greatly influenced the variable number of leaves (strands) and leaf chlorophyll content (units). The best fertilizer was NPK fertilizer which produced an average leaf number of 8.89 cm and an average chlorophyll content of 42.08 units. Based on the observations of both variables, there are clones that don't produce flowers or fruits during the study period, so the interaction between both treatments couldn't be analyzed. The results represent that clone 5 and clone 4 were the most adaptive clones to temperature and climate stress in the lowlands, indicated by good responses on several variables observed were the number of flowers, number of fruit each plant, fruit weight each plant, and percentage of flowers into fruit. The kinds of fertilizers treatment greatly affects to the number of leaves and leaf chlorophyll content. NPK fertilizer was the best one of the four fertilizer treatments. Observation of the qualitative characters of strawberry plants was carried out by direct visual observation on the five clones tested and based on the International Union for the Protection of New Varieties of Plant (UPOV) Geneva guidelines. Each clone tested has its own character. Observation of the qualitative character of strawberry plants included observations of plant morphology, leaves, petioles, flowers and fruit of strawberries

