# RINGKASAN

Seledri (*Apium Graveolens L.)* mengandung flavonoid, vitamin A, B, C, apigenin, dan kolin yang memiliki sifat antimikroba, antioksidan, antihipertensi, dan anti-inflamasi. Seledri termasuk komoditas yang potensial, namun produksinya di Indonesia masih terbatas. Salah satu solusi untuk meningkatkan produksi seledri adalah dengan teknologi hidroponik rakit apung. Sistem hidroponik rakit apung dapat memudahkan pengawasan dan mengurangi risiko hama, namun memerlukan perhatian khusus pada kadar oksigen terlarut dalam larutan nutrisi karena oksigen adalah sumber energi utama bagi pertumbuhan seledri. Oleh karena itu, penggunaan aerator sangat penting untuk memastikan suplai oksigen cukup di perakaran tanaman seledri. Penelitian ini bertujuan untuk mengukur kadar oksigen terlarut pada sistem hidroponik rakit apung dan mengkaji dampaknya terhadap pertumbuhan serta hasil panen seledri.

Penelitian dilakukan di *Experimental Farm* (ketinggian ±102,48 mdpl), Fakultas Pertanian, Universitas Jenderal Soedirman, Purwokerto, pada April–Agustus 2024. Penelitian ini menggunakan Rancangan Acak Lengkap (RAL) dengan dua faktor: varietas seledri (Amigo dan Summer) dan waktu pemberian aerator pada *chamber* larutan nutrisi (tanpa aerator, aerator 24 jam, aerator pagi-sore, aerator sore-pagi). Setiap perlakuan diulang 3 kali sehingga menghasilkan 24 unit percobaan dan 72 tanaman. Pengamatan dilakukan terhadap variabel iklim mikro (suhu, kelembapan, intensitas cahaya) dan pertumbuhan tanaman (tinggi tanaman, jumlah daun, panjang akar, bobot basah dan kering akar dan tajuk). Pengendalian pH dan EC juga dilakukan secara rutin menggunakan pH meter dan EC meter. Pengukuran kadar oksigen terlarut dilakukan dengan DO meter. Analisis data iklim mikro disajikan dengan grafik, sementara data pertumbuhan dianalisis menggunakan ANOVA dan uji DMRT dengan taraf 5%.

Hasil penelitian menunjukkan bahwa seledri membutuhkan aerator agar bisa tumbuh dengan maksimal. Penelitian ini juga menunjukan bahwa waktu pemberian aerator berpengaruh nyata terhadap banyak variabel, seperti perlakuan aerator selama 24 jam (A1) menghasilkan tinggi tanaman terbaik pada M6 (35,02 cm), memberikan jumlah daun tertinggi pada tiap varian dengan jumlah helai daun terbanyak pada M6 (128 helai daun), menghasilkan bobot basah tajuk tertinggi (28,67 gram) dibandingkan tanpa aerator (5,5 gram dan 2,69 gram), menghasilkan bobot kering akar dan tajuk terbaik, yaitu pada 3,1 gram, serta kadar oksigen terbaik pada waktu pemberian aerator selama 24 jam dengan nilai 5,66 mg/L, sedangkan nilai rata-rata terendah berada pada tanpa perlakuan dengan nilai 0,62 mg/L. Pemasangan aerator untuk meningkatkan kadar oksigen dalam larutan nutrisi mendukung pertumbuhan tanaman seledri, dengan pengaruh terbaik pada tinggi tanaman, jumlah daun, bobot basah, dan bobot kering. Faktor lingkungan seperti suhu, kelembaban udara, dan intensitas cahaya lebih berpengaruh signifikan terhadap semua variabel penelitian dibandingkan faktor varietas karena setiap varietas punya kemampuan adaptasi yang berbeda.

## *SUMMARY*

*Celery (Apium Graveolens L.) contains flavonoids, vitamins A, B, C, apigenin, and choline which have antimicrobial, antioxidant, antihypertensive, and anti-inflammatory properties. Celery is a potential commodity, but its production in Indonesia is still limited. One solution to increase celery production is floating raft hydroponic technology. Floating raft hydroponic systems can make monitoring easier and reduce the risk of pests, but require special attention to dissolved oxygen levels in the nutrient solution because oxygen is the main energy source for celery growth. Therefore, the use of an aerator is very important to ensure adequate oxygen supply to the roots of celery plants. This research aims to measure dissolved oxygen levels in a floating raft hydroponic system and examine its impact on celery growth and yields.*

*This research was conducted at the Experimental Farm (altitude ±102.48 meters above sea level), Faculty of Agriculture, Jenderal Soedirman University, Purwokerto, in April–August 2024. This research used a Completely Randomized Design (CRD) with two factors: celery variety (Amigo and Summer) and the time of application of aerator to the nutrient solution chamber (without aerator, 24 hour aerator, morning-afternoon aerator, evening-morning aerator). Each treatment was repeated 3 times to produce 24 experimental units and 72 plants. Observations were made on microclimate variables (temperature, humidity, light intensity) and plant growth (plant height, number of leaves, root length, wet and dry weight of roots and crown). pH and EC control is also carried out routinely using a pH meter and EC meter. Measurement of dissolved oxygen levels is carried out with a DO meter. Microclimate data analysis is presented graphically, while growth data is analyzed using ANOVA and the DMRT test with a 5% level.*

*The results of the study showed that celery requires an aerator to grow optimally. This study also showed that the time of aerator administration had a significant effect on many variables, such as a 24-hour aerator treatment (A1) produced the best plant height in M6 (35.02 cm), gave the highest number of leaves in each variant with the largest number of leaves in M6 (128 leaves), produced the highest wet weight of the crown (28.67 grams) compared to without an aerator (5.5 grams and 2.69 grams), produced the best dry weight of roots and crowns, which was 3.1 grams, and the best oxygen content at the time of aerator administration for 24 hours with a value of 5.66 mg/L, while the lowest average value was without treatment with a value of 0.62 mg/L. The installation of an aerator to increase oxygen levels in the nutrient solution supports the growth of celery plants, with the best effect on plant height, number of leaves, wet weight, and dry weight. Environmental factors such as temperature, air humidity, and light intensity have a more significant effect on all research variables than variety factors because each variety has a different ability to adapt.*