

Muhammad Fajar Maulana (220311100088). Respon pertumbuhan dan hasil *microgreen* bunga matahari (*Helianthus annuus* L.) terhadap berbagai jarak lampu *LED Grow Light*. Oleh: Choirul Umam, S.TP., M.T dan Dr. Diana Nurus S, S. Farm, Apt., M. Si.

ABSTRAK

Microgreen bunga matahari (*Helianthus annuus* L.) merupakan sayuran fungsional yang dapat dipanen pada umur 7–14 hari dengan kandungan nutrisi lebih tinggi dibandingkan tanaman dewasa. Budidaya *microgreen* secara *indoor* memerlukan pencahayaan tambahan menggunakan lampu *LED grow light*, dimana jarak lampu terhadap tanaman berpengaruh terhadap intensitas cahaya yang diterima dan pertumbuhan tanaman. Penelitian ini bertujuan untuk mengetahui respon pertumbuhan dan hasil *microgreen* bunga matahari terhadap berbagai jarak lampu *LED grow light* serta menentukan jarak lampu yang optimal. Penelitian dilaksanakan pada Januari–Maret 2026 di Laboratorium Ilmu Tanaman, Program Studi Agroekoteknologi, Fakultas Pertanian, Universitas Trunodjoyo Madura menggunakan Rancangan Acak Kelompok (RAK) *non faktorial* dengan 4 perlakuan, yaitu kontrol luar ruangan (J0), jarak lampu 20 cm (J1), 30 cm (J2), dan 40 cm (J3), masing-masing diulang 8 kali. Parameter yang diamati meliputi persentase perkecambahan, kecepatan berkecambah, tinggi tanaman, waktu muncul daun sejati, kotiledon terbuka, bobot basah, bobot kering, kandungan klorofil, vitamin C, dan protein. Hasil penelitian menunjukkan bahwa perlakuan jarak lampu *LED* berpengaruh nyata terhadap sebagian besar parameter pertumbuhan dan hasil. Perlakuan J1 (20 cm) menghasilkan bobot basah tertinggi sebesar 5,91 g, klorofil total tertinggi sebesar 0,40 mg/g, dan vitamin C tertinggi sebesar 3,52%, sedangkan perlakuan J2 (30 cm) menghasilkan kandungan protein tertinggi sebesar 1,49%.

Kata Kunci: *Microgreen*, bunga matahari, *LED*, jarak lampu, pertumbuhan

Muhammad Fajar Maulana (220311100088). Response of growth and results of sunflower (*Helianthus annuus* L.) to various distances of *LED Grow Light*. Oleh: Choirul Umam, S.TP., M.T dan Dr. Diana Nurus S, S. Farm, Apt., M. Si.

ABSTRACT

Sunflower *microgreens* (*Helianthus annuus* L.) are functional vegetables that can be harvested within 7–14 days and contain higher nutritional value compared to mature plants. Indoor cultivation of *microgreens* requires additional lighting using *LED grow lights*, where the distance between the lamp and the plant affects the light intensity received and plant growth. This study aimed to determine the growth response and yield of sunflower *microgreens* under different *LED grow light* distances and to identify the optimal lamp distance. The research was conducted from January to March 2026 at the Plant Science Laboratory, Agroecotechnology Study Program, Faculty of Agriculture, Universitas Trunodjoyo Madura, using a non-factorial Randomized Block Design (RBD) with four treatments, namely outdoor control (J0), 20 cm lamp distance (J1), 30 cm (J2), and 40 cm (J3), each repeated eight times. The observed parameters included germination percentage, germination rate, plant height, time of true leaf emergence, cotyledon opening, fresh weight, dry weight, chlorophyll content, vitamin C content, and protein content. The results showed that *LED* lamp distance significantly affected most growth and yield parameters. Treatment J1 (20 cm) produced the highest fresh weight of 5.91 g, the highest total chlorophyll content of 0.40 mg/g, and the highest vitamin C content of 3.52%, while treatment J2 (30 cm) resulted in the highest protein content of 1.49%.

Keyword: *Microgreen*, sunflower, *LED*, lamp distance, growth