

RESPONS FISIOLOGIS DAN ANATOMIS
***Chrysanthemum morifolium* Ramat var. Puspita Nusantara**
PASCA APLIKASI *BIOFERTILIZER* DAN ASAM HUMAT

Regina Nilamsari

22/493738/BI/10953

Dosen Pembimbing: Dr. Dwi Umi Siswanti, S.Si., M.Sc.

INTISARI

Krisan (*Chrysanthemum*) merupakan tanaman hias bernilai ekonomi tinggi, namun sistem budidayanya masih bergantung pada pupuk anorganik yang berpotensi menurunkan kualitas tanah dan lingkungan. *Biofertilizer* dan asam humat dapat menjadi alternatif karena mampu meningkatkan ketersediaan unsur hara serta memperbaiki sifat fisik, kimia, dan biologis tanah. Penelitian ini bertujuan untuk menganalisis respons pertumbuhan dan anatomi tanaman krisan serta mengevaluasi kesuburan tanah setelah aplikasi *biofertilizer* dan asam humat. Penelitian menggunakan Rancangan Acak Lengkap (RAL) dengan satu kontrol dan perlakuan variasi dosis *biofertilizer* (10, 15, dan 20 L/Ha) yang dikombinasikan dengan asam humat. Data dianalisis menggunakan *ANOVA* dan uji DMRT pada taraf kepercayaan 95%. Hasil penelitian menunjukkan bahwa asosiasi *biofertilizer* dan asam humat memberikan pengaruh signifikan terhadap pertumbuhan tanaman krisan, dengan respons terbaik pada tinggi tanaman, jumlah daun, dan biomassa pada perlakuan *biofertilizer* 15 L/Ha + asam humat. Perlakuan *biofertilizer* 10 L/Ha + asam humat meningkatkan ketebalan daun dan jaringan spons, *biofertilizer* 15 L/Ha meningkatkan ketebalan jaringan palisade dan epidermis batang, sedangkan *biofertilizer* 20 L/Ha + asam humat meningkatkan ketebalan epidermis daun, jaringan pengangkut, dan diameter sel empulur. Selain itu, perlakuan asosiasi *biofertilizer* dan asam humat mampu meningkatkan kandungan C-organik dan K-total tanah, sehingga berpotensi mendukung budidaya krisan yang berkelanjutan.

Kata Kunci: anatomi, biomassa, C-organik, krisan, K-total

PHYSIOLOGICAL AND ANATOMICAL RESPONSES OF *Chrysanthemum morifolium* Ramat var. Puspita Nusantara AFTER THE APPLICATION OF BIOFERTILIZER AND HUMIC ACID

Regina Nilamsari

22/493738/BI/10953

Supervisor: Dr. Dwi Umi Siswanti, S,Si., M.Sc.

ABSTRACT

Chrysanthemums are ornamental plants with high economic value, but their cultivation system still relies on inorganic fertilizers that have the potential to reduce soil and environmental quality. Biofertilizers and humic acids can be alternatives because they can increase nutrient availability and improve the physical, chemical, and biological properties of the soil. This study aims to analyze the growth and anatomical response of chrysanthemum plants and evaluate soil fertility after the application of biofertilizer and humic acid. The study used a completely randomized design (CRD) with one control and treatment variations in biofertilizer dosage (10, 15, and 20 L/Ha) combined with humic acid. The data were analyzed using ANOVA and DMRT test at a 95% confidence level. The results showed that the combination of biofertilizer and humic acid had a significant effect on chrysanthemum growth, with the best response in plant height, number of leaves, and biomass in the 15 L/Ha biofertilizer + humic acid treatment. The 10 L/Ha biofertilizer + humic acid treatment increased leaf thickness and spongy tissue, the 15 L/Ha biofertilizer increased the thickness of the palisade tissue and stem epidermis, while the 20 L/Ha biofertilizer + humic acid increased the thickness of the leaf epidermis, vascular tissue, and pith cell diameter. In addition, the combination of biofertilizer and humic acid was able to increase the organic C and total K content of the soil, thus potentially supporting cultivation.

Key Word: *Anatomy, biomass, chrysanthemum, organic carbon, total potassium*