

## ABSTRAK

**Nadia Putri Salsabila. 2022. Uji Penampilan Berbagai Varietas Bayam (*Amaranthus spp.*) Terhadap Cekaman Genangan Akar Di bawah bimbingan Jajang Supriatna dan Liberty Chaidir**

Genangan air merupakan cekaman abiotik yang sering terjadi akibat curah hujan tinggi, drainase yang kurang baik, dan perubahan iklim sehingga menurunkan ketersediaan oksigen di daerah perakaran serta menghambat pertumbuhan tanaman, termasuk bayam (*Amaranthus spp.*). Penelitian ini bertujuan mengevaluasi pengaruh cekaman genangan terhadap penampilan beberapa varietas bayam dan mengidentifikasi varietas yang toleran. Penelitian menggunakan Rancangan Petak Terbagi (*Split Plot*) dengan dua faktor, yaitu perlakuan genangan (tanpa genangan dan genangan selama 4 hari) serta enam varietas bayam (Baret Merah, Belang, Benua, Maestro, Mira, dan Retina), masing-masing diulang tiga kali. Data dianalisis menggunakan ANOVA yang dilanjutkan dengan Uji Duncan pada taraf nyata 5%. Hasil penelitian menunjukkan bahwa interaksi antara genangan dan varietas berpengaruh nyata terhadap tinggi tanaman, jumlah daun, dan klorosis daun, sedangkan genangan berpengaruh nyata terhadap pembentukan akar adventif. Sebaliknya, luas daun, berat segar, berat kering, panjang akar, dan warna daun tidak menunjukkan perbedaan yang nyata. Varietas Retina, Benua, dan Mira menunjukkan respons adaptif yang lebih baik terhadap cekaman genangan berdasarkan pembentukan akar adventif, tingkat klorosis, dan kestabilan warna daun. Ketiga varietas tersebut berpotensi dimanfaatkan sebagai sumber genetik dalam program pemuliaan maupun untuk budidaya pada lahan yang berpotensi tergenang.

**Kata kunci:** Cekaman genangan, varietas bayam, toleransi genangan



## ABSTRACT

**Nadia Putri Salsabila. 2022. Performance Evaluation of Various Spinach (*Amaranthus* spp.) Varieties under Root Waterlogging Stress. Supervised by Jajang Supriatna and Liberty Chaidir**

Waterlogging is an abiotic stress commonly caused by high rainfall, poor drainage, and climate change, resulting in reduced oxygen availability in the root zone and inhibiting plant growth, including spinach (*Amaranthus* spp.). This study aimed to evaluate the effects of waterlogging stress on the performance of several spinach varieties and to identify varieties with greater tolerance to waterlogging conditions. The experiment was conducted using a Split Plot Design with two factors: waterlogging treatment (no waterlogging and four days of waterlogging) and six spinach varieties (Baret Merah, Belang, Benua, Maestro, Mira, and Retina), with each treatment replicated three times. Data were analyzed using Analysis of Variance (ANOVA), followed by Duncan's Multiple Range Test (DMRT) at the 5% significance level. The results showed that the interaction between waterlogging treatment and variety had a significant effect on plant height, leaf number, and leaf chlorosis, while waterlogging treatment significantly affected the formation of adventitious roots. In contrast, leaf area, fresh weight, dry weight, root length, and leaf color were not significantly affected. The Retina, Benua, and Mira varieties exhibited better adaptive responses to waterlogging stress, as indicated by greater adventitious root formation, lower levels of leaf chlorosis, and more stable leaf color. These varieties have potential as genetic resources for breeding programs and for cultivation in areas prone to waterlogging.

**Keywords:** Waterlogging stress, spinach varieties, waterlogging tolerance.

