

**INDUKSI KETAHANAN BAWANG MERAH (*Allium cepa* L.
aggregatum group) terhadap PENYAKIT MOLER
MENGGUNAKAN SINAR ULTRAVIOLET-B**

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Intisari

Sinar UV-B diketahui dapat menginduksi ketahanan tanaman sehingga mampu menurunkan kejadian penyakit tanaman. Penyakit moler merupakan patogen yang menginfeksi akar dan umbi, gejala yang muncul berupa pembusukan akar, perubahan warna hingga nekrosis di dasar umbi lapis dan gejala visual pada daun menunjukkan daun yang menguning dan terpelintir. Penelitian ini bertujuan untuk mengetahui kemampuan sinar UV-B dalam menekan penyakit moler pada bawang merah, potensi induksi ketahanan tanaman melalui akumulasi enzim peroksidase, asam salisilat, kandungan klorofil dan untuk mengamati pertumbuhan bawang merah setelah perlakuan. Penelitian ini menerapkan sinar UV-B dengan durasi 65 mW/m² selama 4 jam setiap hari selama 3, 5 dan 7 hari, untuk tanaman yang diinokulasi dan tidak diinokulasi. Fungisida (Benomil) digunakan sebagai pembanding untuk tanaman yang diinokulasi. Hasil penelitian menunjukkan bahwa penyinaran UV-B 4 jam/hari selama 7 hari mampu menurunkan kejadian penyakit moler pada bawang merah, namun masa inkubasi antar perlakuan tidak berbeda nyata. Penyinaran UV-B 4 jam/hari, selama 7 hari mampu meningkatkan kadar asam salisilat, dan mempertahankan kadar klorofil yang sama dengan kontrol negatif, namun kadar enzim peroksidase tidak berbeda nyata. Perlakuan penyinaran sinar UV-B 4 jam/hari selama 7 hari tidak menghambat pertumbuhan dan produksi tanaman bawang merah.

Kata kunci: Sinar ultraviolet-b; induksi ketahanan; bawang merah; moler

INDUCED RESISTENCE OF SHALLOT (*Allium cepa* L. *Ageratum* *group*) AGAINST TWISTED DISEASE USING ULTRAVIOLET B LIGHT

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Abstract

UV-B light is known to induce plant resistance, therefore it could reduce the plant disease incidence. Shallot twisted disease is a pathogen that infects roots and tubers, symptoms that appear are root rot, discoloration to necrosis at the base of the tuber and visual symptoms on the leaves showing yellow and twisted leaves. This study aimed to determine the ability of UV-B light in suppressing shallot twisted disease, potency of plant resistance induction through accumulation of peroxidase enzymes, salicylic acid, chlorophyll content and to observe shallot growth after treatment. In this study, UV-B light was applied with a dose of 65 mW/m² for 4 hours each day for 3, 5 and 7 days, for inoculated and non-inoculated plants. Fungicide (Benomyl) was used as a comparison for inoculated plants. The results showed that UV-B irradiation of 4 hours/day for 7 days was able to reduce the incidence of shallot twisted disease, but the incubation period among treatments was not significantly different. UV-B irradiation of 4 hours/day, for 7 days was able to increase salicylic acid content, and maintain the same chlorophyll content as the negative control, however the peroxidase enzyme content was not significantly different. The treatment of UV-B light irradiation has the potential to inhibit plant growth, but the UV-B 4 hours/day for 7 days did not inhibit the growth and production of shallot plants on all shallot agronomic parameters.

Keywords: Ultraviolet-B light; induce resistance; shallot; twisted