

**PENGARUH BERBAGAI JENIS MEDIA
MATRICONDITIONING DENGAN BIOPRIMING TERHADAP
VIABILITAS, VIGOR, PERTUMBUHAN, DAN HASIL
TANAMAN MENTIMUN (*Cucumis sativus* L.)**

Oleh: Nazzala Soraya Damayanti
Dibimbing oleh: Ami Suryawati

ABSTRAK

Produktivitas tanaman mentimun di Indonesia mengalami penurunan diduga akibat penggunaan benih berkualitas rendah. Permintaan akan mentimun terus meningkat. Salah satu cara untuk mengatasi permasalahan tersebut yaitu dengan perlakuan *matriconditioning* dengan *biopriming*. Penelitian ini bertujuan untuk mengetahui pengaruh jenis bahan *matriconditioning* dan *biopriming* terhadap viabilitas, vigor, pertumbuhan, dan hasil tanaman mentimun. Penelitian dilaksanakan pada bulan Februari – April 2025 menggunakan metode Rancangan Acak Lengkap (RAL) 2 faktor dengan 8 aras + 1 kontrol dan 3 ulangan yaitu kontrol, *matriconditioning* arang sekam dan batu bata, kombinasi *matriconditioning* arang sekam dan batu bata dengan *Trichoderma* sp. dan EM4. Hasil penelitian dianalisis dengan ANOVA pada taraf uji 5% dilanjutkan uji *Duncan Multiple Range Test* (DMRT) pada taraf uji 5% dan uji kontras ortogonal untuk kontrol. Hasil penelitian menunjukkan perlakuan *matriconditioning* dan *biopriming* nyata lebih tinggi dibanding kontrol pada seluruh parameter kecuali tinggi tanaman, jumlah daun, dan jumlah buah. Terdapat interaksi terbaik pada perlakuan *matriconditioning* arang sekam dan *biopriming* *Trichoderma* sp. terhadap parameter jumlah daun dan bobot buah. *Matriconditioning* arang sekam memberikan pengaruh terbaik pada parameter daya berkecambah. *Biopriming* *Trichoderma* sp. + EM4 memberikan pengaruh terbaik pada parameter tinggi tanaman, panjang buah, dan diameter buah.

Kata Kunci: Mentimun, *matriconditioning*, *Trichoderma* sp., EM4.

THE EFFECT OF VARIOUS MATRICONDITIONING MEDIA WITH BIOPRIMING ON VIABILITY, VIGOR, GROWTH, AND YIELD OF CUCUMBER PLANTS (*Cucumis sativus* L.)

By: Nazzala Soraya Damayanti
Supervised by: Ami Suryawati

ABSTRACT

The productivity of cucumber plants in Indonesia has declined, presumably due to the use of low-quality seeds, while demand for cucumbers continues to increase. One way to address this problem is through matriconditioning combined with biopriming. This study aimed to determine the effects of different matriconditioning and biopriming materials on seed viability, vigor, growth, and yield of cucumber plants. The research was conducted from February to April 2025 using a Completely Randomized Design (CRD) with 2 factors, 8 treatments + 1 control, and 3 replications, consisting of control, matriconditioning with rice husk charcoal and brick powder, as well as their combinations with *Trichoderma* sp. and EM4. Data were analyzed using ANOVA at a 5% significance level, followed by Duncan's Multiple Range Test (DMRT) and orthogonal contrast tests for the control. The results showed that matriconditioning and biopriming treatments were significantly higher than the control for all parameters except plant height, number of leaves, and number of fruits. The best interactions were found in rice husk charcoal matriconditioning with *Trichoderma* sp. biopriming, for leaf number and fruit weight. Rice husk charcoal matriconditioning produced the highest germination, while *Trichoderma* sp. + EM4 biopriming gave the best results for plant growth and fruit traits.

Keywords: Cucumber, matriconditioning, *Trichoderma* sp., EM4.