

**PENGARUH *COATING* MENGGUNAKAN EKSTRAK
KULIT JERUK MANIS SELAMA PENYIMPANAN
TERHADAP VIABILITAS DAN VIGOR
BENIH KAKAO (*Theobroma cacao* L.)**

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ABSTRAK

Benih kakao (*Theobroma cacao* L.) merupakan benih rekalsitran yang memiliki viabilitas dan vigor rendah setelah disimpan karena kadar airnya sulit dipertahankan selama penyimpanan. Kondisi tersebut menjadi kendala dalam penyediaan benih bermutu sehingga diperlukan upaya untuk mempertahankan mutu fisiologis benih. Salah satu alternatif yang dapat digunakan adalah *coating* menggunakan ekstrak kulit jeruk manis yang mengandung pektin serta senyawa bioaktif. Penelitian ini bertujuan untuk mengetahui pengaruh *coating* berbahan ekstrak kulit jeruk manis terhadap viabilitas dan vigor benih kakao selama penyimpanan serta menentukan konsentrasi ekstrak yang efektif. Penelitian dilaksanakan di Laboratorium Teknologi Benih, Fakultas Pertanian Universitas Andalas Kampus III Dharmasraya pada bulan Desember 2025 sampai Maret 2026 menggunakan Rancangan Acak Lengkap (RAL) dengan lima taraf konsentrasi ekstrak kulit jeruk manis (0%, 1%, 1,5%, 2%, dan 2,5%) yang diulang empat kali. Data dianalisis menggunakan uji F dan dilanjutkan dengan *Duncan's New Multiple Range Test* (DNMRT) pada taraf nyata 5%. Hasil penelitian menunjukkan bahwa *coating* berbahan ekstrak kulit jeruk manis mampu mempertahankan kadar air benih sebelum penyimpanan, menurunkan persentase benih berjamur dan benih mati, serta meningkatkan persentase kecambah normal, nilai *First Count Test* (FCT), dan *Index Value Test* (IVT). Konsentrasi ekstrak kulit jeruk manis 2% merupakan konsentrasi yang efektif untuk mempertahankan mutu fisiologis benih kakao selama penyimpanan.

Kata kunci: Benih kakao, *coating* benih, ekstrak kulit jeruk manis, mutu fisiologis, penyimpanan benih

EFFECT OF COATING USING SWEET ORANGE PEEL EXTRACT DURING STORAGE ON THE VIABILITY AND VIGOR OF CACAO (*Theobroma cacao* L.) SEEDS

ABSTRACT

Cacao (*Theobroma cacao* L.) seed is classified as recalcitrant seeds, which exhibit low viability and vigor after storage due to the difficulty of maintaining their moisture content during the storage period. This condition poses a significant challenge in the provision of high-quality seeds, thereby necessitating efforts to preserve their physiological quality. One potential approach is seed coating using sweet orange peel extract, which contains pectin and various bioactive compounds. The objectives of this study were to evaluate the effect of seed coating with sweet orange peel extract on the viability and vigor of cacao seeds during storage and to determine the most effective extract concentration. The research was conducted at the Seed Technology Laboratory, Faculty of Agriculture, Universitas Andalas, the 3rd Campus in Dharmasraya, from December 2025 until March 2026. A Completely Randomized Design (CRD) was employed, consisting of five concentrations levels of sweet orange peel extract (0%, 1%, 1,5%, 2%, and 2,5%) which is repeated four times. Data were analyzed using analysis of variance (F-test), followed by *Duncan's New Multiple Range Test* (DNMRT) at the 5% significance level. The results indicated that seed coating with sweet orange peel extract was effective in maintaining seed moisture content prior to storage, reducing the percentage of mold-infected and dead seeds, and increasing the percentage of normal seedlings, First Count Test (FCT) values, and Index Value Test (IVT) scores. Among the tested concentrations, 2% sweet orange peel extract was found to be the most effective in preserving the physiological quality of cacao seeds during storage.

Keywords: Cacao seeds, physiological quality, seed coating, seed storage, sweet orange peel extract