

**PENGARUH PEMBERIAN TEPUNG CANGKANG TELUR  
AYAM DAN KOMPOS *Tithonia diversifolia* TERHADAP  
PERTUMBUHAN BIBIT KAKAO PADA MEDIA  
TANAH BEKAS TAMBANG EMAS**

**SKRIPSI**



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# PENGARUH PEMBERIAN TEPUNG CANGKANG TELUR AYAM DAN KOMPOS *Tithonia diversifolia* TERHADAP PERTUMBUHAN BIBIT KAKAO PADA MEDIA TANAH BEKAS TAMBANG EMAS

## Abstrak

Kakao (*Theobroma cacao* L.) merupakan tanaman perkebunan penting di Indonesia. Tahap pembibitan menentukan kualitas tanaman, sedangkan media tanam berperan menunjang pertumbuhan. Tanah bekas tambang emas yang terbengkalai berpotensi dimanfaatkan sebagai media tanam. Tepung cangkang telur ayam broiler mengandung kalsium karbonat yang dapat meningkatkan pH tanah, sedangkan kompos *Tithonia diversifolia* berfungsi menambah unsur hara dan memperbaiki struktur serta aktivitas biologi tanah. Kedua bahan tersebut berpotensi memperbaiki tanah bekas tambang emas yang terdegradasi, miskin hara, dan tercemar Hg sehingga meningkatkan kesuburan dan pertumbuhan bibit kakao. Penelitian ini dilaksanakan di Kebun Percobaan dan Laboratorium Universitas Andalas Kampus Dharmasraya pada bulan Februari hingga Agustus 2025. Penelitian ini menggunakan Rancangan Acak Lengkap (RAL) faktorial dengan 2 faktor. Faktor pertama adalah tepung cangkang telur ayam broiler (0, 100, 125, 150 g/5 kg tanah) dan faktor kedua adalah kompos *T. diversifolia* (0, 125, 200, 275 g/5 kg tanah). Hasil penelitian menunjukkan bahwa tepung cangkang telur ayam broiler berpengaruh nyata terhadap tinggi bibit (69,51 cm), jumlah daun (24,83 helai), volume akar (19,50 ml), bobot kering akar (8,96 g), dan rasio tajuk akar (5,40 g). Pengaruh tunggal kompos *T. diversifolia* berpengaruh nyata terhadap tinggi bibit (6776 cm), diameter batang (11,87 mm), volume akar (23,58 ml), bobot kering akar (8,03 g), dan rasio tajuk akar (4,70 g). Interaksi keduanya berpengaruh signifikan terhadap luas daun (3.778,14 cm<sup>2</sup>) dan bobot kering tajuk (53,56 g). Dosis terbaik diperoleh pada kombinasi 125 g/5 kg tanah tepung cangkang telur ayam broiler dan 200 g/5 kg tanah kompos *T. diversifolia*.

Kata kunci: Bahan Organik, Bibit, Kalsium Karbonat, Limbah

# THE EFFECT OF CHICKEN EGG SHELL FLOUR AND *Tithonia diversifolia* COMPOST ON THE GROWTH OF COCOA SEEDLINGS ON FORMER GOLD TAILING SOIL

## Abstract

Cocoa (*Theobroma cacao* L.) is an important plantation crop in Indonesia. The nursery stage determines plant quality, while the planting medium plays a role in supporting growth. Abandoned gold mining land has the potential to be used as a planting medium. Broiler chicken eggshell flour contains calcium carbonate which can increase soil pH, while *Tithonia diversifolia* compost functions to add nutrients and improve soil structure and biological activity. Both materials have the potential to improve degraded, nutrient-poor, and Hg-contaminated former gold mining soil, thereby increasing the fertility and growth of cocoa seedlings. This research was conducted at the Experimental Garden and Laboratory of Andalas University, Dharmasraya Campus from February to August 2025. This study used a factorial Completely Randomized Design (CRD) with 2 factors. The first factor was broiler chicken eggshell flour (0, 100, 125, 150 g/5 kg of soil) and the second factor was *T. diversifolia* compost (0, 125, 200, 275 g/5 kg of soil). The results showed that broiler chicken eggshell flour significantly affected seedling height (69.51 cm), number of leaves (24.83 pieces), root volume (19.50 ml), root dry weight (8.96 g), and root crown ratio (5.40 g). The single effect of *T. diversifolia* compost significantly affected seedling height (6776 cm), stem diameter (11.87 mm), root volume (23.58 ml), root dry weight (8.03 g), and root crown ratio (4.70 g). The interaction of both significantly affected leaf area (3,778.14 cm<sup>2</sup>) and shoot dry weight (53.56 g). The best dose was obtained in a combination of 125 g/5 kg of broiler chicken eggshell flour soil and 200 g/5 kg of soil *T. diversifolia* compost.

Keywords: Organic Materials, Seedlings, Calcium Carbonate, Waste