

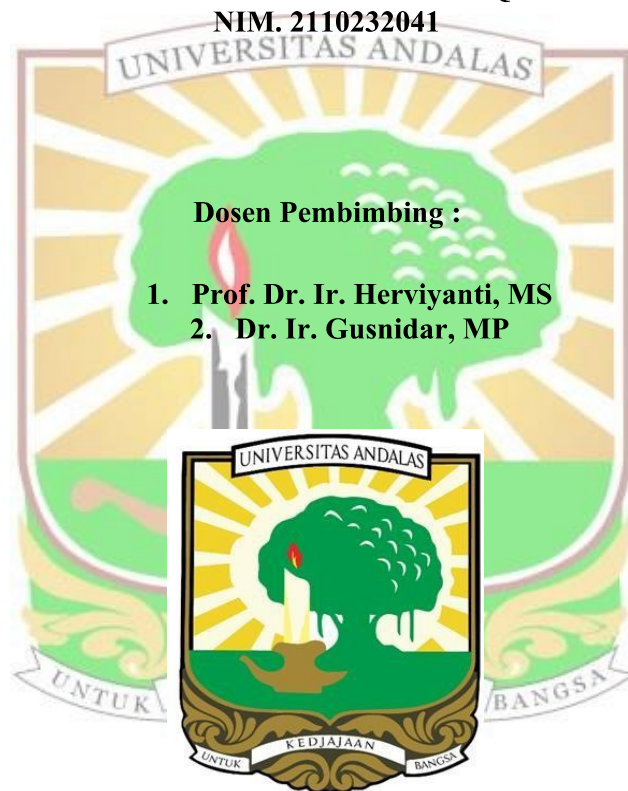
**APLIKASI FORMULASI AMELIORAN BERBASIS  
SUMBERDAYA LOKAL DI BANUHAMPU TERHADAP  
PRODUKSI TANAMAN BUNCIS (*Phaseolus vulgaris* L)  
PADA INCEPTISOL**

**SKRIPSI**

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# **APLIKASI FORMULASI AMELIORAN BERBASIS SUMBERDAYA LOKAL DI BANUHAMPU TERHADAP PRODUKSI TANAMAN BUNCIS (*Phaseolus vulgaris* L) PADA INCEPTISOL**

## **ABSTRAK**

Pertanian Intensif dengan menggunakan pestisida dan pupuk sintetis secara intensif menyebabkan penurunan beberapa sifat kimia Inceptisol di Nagari Pakan Sinayan, Kecamatan Banuhampu, Kabupaten Agam Provinsi Sumatera Barat. Pemberian formulasi amelioran berbasis sumberdaya lokal sebagai solusi alternatif untuk memperbaiki sifat kimia Inceptisol dilahan hortikultura. Penelitian ini bertujuan untuk menentukan formulasi amelioran berbasis sumberdaya lokal yang tepat berupa pupuk hijau tithonia, pupuk kandang ayam, kompos, dan biochar bambu sehingga mampu meningkatkan sifat kimia Inceptisol dan meningkatkan produksi tanaman buncis (*Phaseolus vulgaris* L) dibandingkan budidaya konvensional. Penelitian ini menggunakan rancangan acak kelompok (RAK) dengan tiga ulangan. Perlakuan terdiri dari (A) konvensional; (B) 3,3 Ton Biochar Bambu + 3,3 Ton pupuk hijau tithonia + 3,3 Ton pupuk kandang ayam +  $\frac{1}{2}$  rekomendasi pupuk buatan; (C) 3,3 Ton Biochar Bambu + 3,3 Ton thitonia+ 3,3 Ton Kompos +  $\frac{1}{2}$  rekomendasi pupuk buatan; (D) Rekomendasi pemupukan oleh Kementerian Pertanian. Parameter yang dianalisis yaitu, analisis tanah awal, pH H<sub>2</sub>O, KTK dan K-dd, P- tersedia, N- total, C-organik, produksi, dan kadar hara N, P, K tanaman. Hasil penelitian menunjukkan bahwa 3,3 Ton Biochar Bambu + 3,3 Ton Thitonia + 3,3 Ton Pupuk kandang ayam +  $\frac{1}{2}$  rekomendasi pupuk buatan dapat meningkatkan nilai pH sebesar 0,5 unit, P-tersedia 14,26 ppm, N- total 0,77%, C-organik 1,17%, KTK dan K-dd sebesar 4,02 cmol/kg dan 0,67 cmol/kg, produksi tanaman buncis 3,31kg dan kadar hara N,P,K sebesar 1,16% N, 0,017% P, dan 1,16% K dibandingkan dengan konvensional (10 Ton pupuk kandang +1 rekomendasi pupuk buatan).

Kata kunci: Amelioran, Buncis, Formulasi, Inceptisol

# APPLICATION OF LOCALLY SOURCED AMELIORANT FORMULATIONS IN BANUHAMPU ON THE PRODUCTION OF COMMON BEAN (*Phaseolus vulgaris* L) IN INCEPTISOL

## ABSTRACT

Intensive agriculture using pesticides and synthetic fertilizers has caused a decline in several chemical properties of Inceptisol in Nagari Pakan Sinayan, Banuhampu District, Agam Regency, West Sumatra Province. The application of locally sourced ameliorant formulations serves as an alternative solution to improve the chemical properties of Inceptisol in horticultural land. This study was aimed to determine the appropriate ameliorant formulation based on local resources, (*Tithonia* green manure, chicken manure, compost, and bamboo biochar), that could enhance the chemical properties of Inceptisol and yield of green bean (*Phaseolus vulgaris* L.) plants compared to conventional cultivation. The treatments consisted of: (A) conventional; (B) 3.3 tons of bamboo biochar + 3.3 tons of *Tithonia* green manure + 3.3 tons of chicken manure +  $\frac{1}{2}$  recommended synthetic fertilizer; (C) 3.3 tons of bamboo biochar + 3.3 tons of *Tithonia* + 3.3 tons of compost +  $\frac{1}{2}$  recommended synthetic fertilizer; and (D) fertilization recommended by the Ministry of Agriculture, with 3 replicates. The experimental units were allocated based on randomized block design (RBD). The parameters analyzed included, pH H<sub>2</sub>O, cation exchange capacity (CEC), (initial soil analysis) then exchangeable K, available P, total N, organic C, yield, and plant nutrient contents of N, P, and K (after harvesting). The results showed that the application of 3.3 tons of bamboo biochar + 3.3 tons of *Tithonia* + 3.3 tons of chicken manure +  $\frac{1}{2}$  recommended synthetic fertilizer increased soil pH by 0.5 units, available P by 14.26 ppm, total N by 0.77%, organic C by 1.17%, CEC and exchangeable K by 4.02 me/100g and 0.67 me/100g, respectively, green bean yield by 3.31 kg, and plant nutrient contents after harvesting by 1.16% N, 0.017% P, and 1.16% K compared to the conventional treatment (10 tons of manure + full recommended synthetic fertilizer).

Keywords: Ameliorant, Green bean, Formulation, Inceptisol