

EFFECTS OF PELLET BINDER CMC (Carboxymethyl Cellulose) VISCOSITY AND PROTEASE ENRICHED DRINKING WATER ON THE PERFORMANCE AND HEALTH STATUS OF IPB-D1 CHICKENS

DWI ROBIATUL ADAWIYAH



**DEPARTMENT OF ANIMAL NUTRITION AND FEED TECHNOLOGY
FACULTY OF ANIMAL SCIENCE
BOGOR AGRICULTURAL UNIVERSITY
BOGOR
2025**



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ABSTRACT

DWI ROBIATUL ADAWIYAH. Effect of Pellet Binder CMC (Carboxymethyl Cellulose) Viscosity and Protease Enriched Drinking Water on the Performance and Health Status of IPB-D1 Chickens. Supervised by MUHAMMAD RIDLA and WIDYA HERMANA.

This study aimed to evaluate the performance and health of IPB-D1 chickens fed pellets with 0.5% CMC *binder* and the addition of 10 mg L⁻¹ protease enzyme in drinking water. A total of 200 IPB-D1 chickens were reared until 8 weeks of age using a factorial completely randomized design (CRD) with two factors and five replications, consisting of 2 different types of CMC *binder* (F1501P viscosity 1000-2500 cps) and (CMC F3001P viscosity 2500-4000 cps) and the addition of enzyme in drinking water (0 mg L⁻¹ and 10 mg L⁻¹). Parameters observed included performance, blood profile, immune organs, internal organs, digestive organs, and carcass percentage. Results showed that the CMC *binder* had a significant effect on the lymph weight and bursa fabricius. The addition of the protease enzyme in drinking water increased leukocyte levels, thymus weight, and relative length of jejunum and ileum. The use of CMC *binder* pellets and the addition of protease enzyme in drinking water did not affect the growth performance and health status of IPB-D1 chickens.

Keywords: CMC, health status, IPB-D1 chicken, pellet, performance

ABSTRAK

DWI ROBIATUL ADAWIYAH. Pengaruh *Binder* Pelet CMC (*Carboxymethyl Cellulose*) dan Penambahan Protease dalam Air Minum terhadap Performa dan Status Kesehatan Ayam IPB-D1. Dibimbing oleh MUHAMMAD RIDLA dan WIDYA HERMANA.

Penelitian ini bertujuan mengevaluasi performa dan kesehatan ayam IPB-D1 yang diberi pakan pelet dengan 0,5% *binder* CMC dan penambahan enzim protease 10 mg L⁻¹ dalam air minum. Sebanyak 200 ekor ayam IPB-D1 dipelihara hingga umur 8 minggu dengan menggunakan Rancangan Acak Lengkap (RAL) Faktorial dengan dua faktor dan lima ulangan yang terdiri atas 2 jenis pelet mengandung *binder* CMC (F1501P viskositas 1000-2500 cps) dan (CMC F3001P viskositas 2500-4000 cps) serta enzim protease dalam air minum (0 mg L⁻¹ dan 10 mg L⁻¹) Parameter yang diamati mencakup performa, profil darah, organ imunitas, organ dalam, organ pencernaan, dan persentase karkas. Hasil menunjukkan bahwa *binder* CMC berpengaruh nyata terhadap bobot limfa dan bursa fabricius, sementara penambahan enzim protease dalam air minum meningkatkan kadar leukosit, bobot timus, serta panjang relatif jejunum dan ileum. Penggunaan pelet mengandung *binder* CMC dan penambahan enzim protease dalam air minum tidak mengganggu performa dan status kesehatan ayam IPB-D1.

Kata kunci: ayam IPB-D1, CMC, pelet, performa, status kesehatan



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DWI ROBIATUL ADAWIYAH

Bachelor's Thesis
as one of the requirements for acquiring a Bachelor's
degree in the Animal Nutrition and Feed Technology
Study Program

**DEPARTMENT OF ANIMAL NUTRITION AND FEED TECHNOLOGY
FACULTY OF ANIMAL SCIENCE
BOGOR AGRICULTURAL UNIVERSITY
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Examination Committee for the Bachelor's Thesis Defense:
1. Prof. Dr. Ir. Yuli Retnani, M.Sc
2. Ir. Dwi Margi Suci, M.S.

Title of Bachelor's Thesis : Effect of Pellet Binder CMC (Carboxymethyl Cellulose) Viscosity and Protease Enriched Drinking Water on The Performance and Health Status of IPB-D1 Chickens

Name : Dwi Robiatul Adawiyah

NIM : D2401211125

Approved by

Supervised 1:

Prof. Dr. Ir. Muhammad Ridla, M.Agr.



Supervised 2:

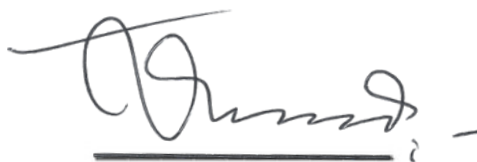
Dr. Ir. Widya Hermana, M.Si.



Acknowledged by

Head of Study Program of Animal Nutrition and Feed Technology:

 Dr. Ir. Heri Ahmad Sukria, M.Sc.Agr.
NIP 196607061991031003



Exam date:
21 Mei 2025

Graduate date:

FOREWORD

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Bogor, May 2025

Dwi Robiatul Adawiyah



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