

EFFECTS OF SPENT COFFEE GROUNDS ON RUMEN
MICROBIAL POPULATION OF NON-DESCRIPT
PHILIPPINE GOATS (*Capra hircus* L.)

THESIS

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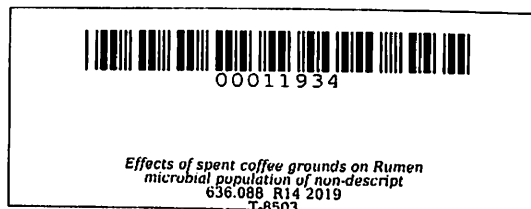
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**EFFECTS OF SPENT COFFEE GROUNDS ON RUMEN
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An Undergraduate Thesis
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ABSTRACT

RAMOS, LILA ISABEL R. Effects of Spent Coffee Grounds on Rumen Microbial Population of Non-Descript Philippine Goats (*Capra hircus* L.) Undergraduate Thesis. Bachelor of Science in Agriculture major in Animal Science. Cavite State University, Indang, Cavite. June 2019. Adviser: Dr. Nelson J. Montialto

This study was conducted using spent coffee grounds in concentrate diets as defaunating agent. Defaunation was performed by supplementing spent coffee grounds as follows: T1 (Control) – Napier Grass + Concentrates (at 1.0% of body weight); T2 – Napier Grass + Concentrates (at 0.75% of body weight) + Spent Coffee Grounds (at 0.25% of body weight); T3 – Napier Grass + Concentrates (at 0.50% of body weight) + Spent Coffee Grounds (at 0.50% of body weight); and T4 – Napier Grass + Concentrates (at 0.25% of body weight) + Spent Coffee Grounds (at 0.75% of body weight). The experiment was set up in a Completely Randomized Design (CRD). Rumen fluid was collected in each animal through stomach tubing before and after the experiment for bacterial and protozoal counting. Results revealed that spent coffee grounds ($P < 0.001$) is effective in reducing protozoal numbers and increasing the bacterial population in all levels and frequencies as compared to the control. However, T4 appeared to be the best treatment in reducing protozoal numbers with a corresponding greater increase in bacterial counts. Therefore, spent coffee grounds can effectively manipulate the rumen environment by reducing the protozoa without negative effects on bacteria.

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INTRODUCTION

Goat farming plays an important role in alleviating poverty for it is an appealing enterprise for small scale farmers in the Philippines. The increasing demand for goat meat (chevon) in the local market encourages farmer and raisers to produce more, thus, farmers earn more and could become big entrepreneurs (Aban, *et al.*, 2015).

The rumen of ruminants is a complex microbial ecosystem where microorganisms such as bacteria, protozoa and fungi break down the fibers and proteins of the feed ingredients which are then absorbed as volatile fatty acid (VFA). The efficiency of nutrient utilization is determined mainly by the balance of the rumen fermentation products and this balance is controlled by the types of microorganisms in the rumen (Castillo-González, *et al.*, 2013). Rumen defaunation or the removal of protozoa in the rumen is one of the techniques used to improve production of animals fed with low