

**IN VITRO ANALYSIS OF THE EFFICACY OF KAMIAS (*Averrhoa bilimbi*)  
FRUIT EXTRACT AS AN ANTHELMINTIC ALTERNATIVE  
TREATMENT AGAINST *Ascaris suum***

**Research Study**

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*In vitro analysis of the efficacy of  
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## ABSTRACT

LINAO, DIANNE KAYLE C., MALTO, MARIE LHAR G.,and SABELA, CALIXTO JR. S. **In vitro analysis of the efficacy of kamias (*Averrhoa bilimbi*) fruit extract as an Anthelmintic alternative treatment against *Ascaris suum*.** Undergraduate Thesis. Bachelor of Science in Medical Technology. Cavite State University, Indang, Cavite . October 2018. Adviser: Jo Hanes Contemprato , RMT.

This study was conducted to determine the efficacy of kamias fruit (*Averrhoa bilimbi*) extracts against *Ascaris suum*. Specifically, the study aimed to evaluate the anthelmintic activity of kamias fruit (*Averrhoa bilimbi*) extracts according to the mortality rate per time interval; and to determine the concentration of the extract from kamias (*Averrhoa bilimbi*) fruit shows significant effect against *Ascaris suum*.

After preparation and maceration of kamias fruit, the extracts was then filtered and was subjected to the rotary evaporator for the removal of the alcohol. Two hundred fifty *Ascaris suum* adult worms was collected from the slaughter house and were placed in a clean glass container containing 0.9 percent normal saline solution, they were traveled from the slaughter house to the laboratory and transferred into a 500ml beakers after rinsing. Five *Ascaris suum* adult worms were distributed to each beaker having various concentration of *Averrhoa bilimbi* fruit extract. Criteria showing the physical characteristics of the adult worms was used in assigning the portion of each extracts with *Ascaris suum* adult worm.

The researchers determined the prepared extract concentration that exhibited the highest efficacy of killing worms, being the 100 percent concentration of kamias (*Averrhoa bilimbi*) fruit extract, next was the 75 percent concentration of kamias fruit extract, then the 50 percent kamias fruit extract, and least that showed its efficacy was the

25 percent kamias fruit extract. *Ascaris suum* incorporated in 400mg Albendazole with distilled water, observations showed that worms were already dead at three hours of observation while the remaining concentrations showed their optimum efficacy at 12 hours of observation. Proper disposal of samples and extracts was performed.

Meanwhile, at 25 percent kamias fruit extracts, the efficacy of the concentration is 51.8 percent, next is the 50 percent kamias fruit extracts which had the efficacy of 84.62 percent, while in 75 percent kamias fruit extracts the efficacy was 92.86 percent. Moreover, at 100 percent kamias fruit extracts the efficacy is 98.31 percent. It would be best to say that the best time for a parasite to die using *Averrhoa bilimbi* fruit extracts would be 12 hours, since at time of 12 hours the mortality rate is 100 percent for all level of concentration.

Therefore, the efficacy of *Averrhoa bilimbi* fruit extract as an anthelmintic alternative treatment against *Ascaris suum* was comparable and could be used as an alternative to Albendazole.

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## INTRODUCTION

Intestinal parasites such as *Ascaris suum* can cause intestinal disease and major production losses in pig production possibly with more serious impact to the small holder farms, which account for about 64 percent of the country's pig production according to Philippine Statistics Authority (PSA), 2015.

The nematode parasite *Ascaris lumbricoides* infects the digestive tracts of over 1.4 billion people worldwide, and its closely related species, *Ascaris suum*, has infected a countless number of domesticated and feral pigs. Adults of the large roundworm, *Ascaris suum*, are found in the small intestine and sometimes in the large intestine during expulsion of the worms. These worms are mainly present in communities where poverty prevails, where there is a lack of safe drinking water and where sanitation is poor.