17TH National Organic Agriculture Congress

Conference Proceedings

"Maunlad na Pagsasaka, Garantisado sa Organikong Agrikulturang Sinaliksik"

March 21-24, 2023
UNIVERSITY OF SOUTHERN MINDANAO
KABACAN, COTABATO

TABLE OF CONTENTS

Poultry and Livestock

RICE

(USM College of Arts and Social Sciences - AVR)

TRACK SCHEDULE	RESEARCH TOPIC	SPEAKER
9:00 - 11:30 AM	Efficacy Evaluation of IMO Applied with *Metarhizium anisopliae* against *Scotinophara coarctata* Fabricus (Rice Black Bug)	Dr. Joseph O. Castillo
	Efficacy of Aktrine 4.6 SL (Matrine) for the Control of Major Insect Pests of Rice	

POULTRY AND LIVESTOCK

(USM Skyroom)

TRACK SCHEDULE	RESEARCH TOPIC	SPEAKER
9:00- 11:30 AM	Mangosteen Rind Powder: A Natural Feed Additive for Chickens	Dr. Julius Jerome Ele
	Evaluation of Vermi Meal as Potential Organic Feed for Nile Tilapia Fingerlings	Mr. Zaldy Hechanova
	Growth of Nile Tilapia (*Oreochromis niloticus*) Using Varying Levels of Vermicast with Partial Supplementation of Feeds	
	Organic Complete Ration Mix (OCRM) Potential Feeds and Feeding System for Dairy Goats Production of Improved Fermented Biological Extracts	Dr. Cayetano Pomares
2:00 - 4:00 PM	Phenotypic Characteristics and Egg Quality of Improved Philippine Mallard Duck (*Anas platyrhynchos domesticus* L.) under Intensive Management System	Dr. Mary Joy Cañolas
	Growth and Carcass Performance of Male White Leghorn Fed with Organic and Commercial Free-range Diets Raised under Extensive Rearing System	Dr. Noel Lumbo

Mangosteen Rind Powder: A Natural Feed Additive for Chickens

Study 1. Immune Response of Broiler Chickens Fed Diets with Different Levels of Mangosteen (*Garcinia mangostana* Linn.) Rind Powder[1]

Julius Jerome G. Ele[2] , Josephine R. Migalbin[3], Elma G. Sepelagio[4], Vingelle B. Jimenez[5] and Peter Greame F. Lacia[6]

ABSTRACT. *The general objective of the study is to determine the immune response of feeding diets with different levels of mangosteen rind powder to broiler chickens. Specifically, it aimed (1) to determine the immune responses of broiler chickens on the total white blood cell count, heterophil count and lymphocyte count, including the presence of basophils, eosinophils and monocytes and (2) to determine the immune effects of the different levels of mangosteen rind powder on the bursa of Fabricius and spleen through histological examination. The study was conducted in a Completely Randomzed Design. A total of eighty (80) day old chicks were randomly distributed into five (5) different treatments. The five (5) treatments used include the control wherein no mangosteen rind powder or no commercial antioxidant is incorporated in the diet, commercial antioxidant incorporated in the diet, 33 g of mangosteen rind powder/ kg of feed, 66 g of mangosteen rind powder/ kg of feed and 100 g of mangosteen rind powder/ kg of feed. For study 1 and 2, formulated diets of corn-soya based was used incorporated with different levels of mangosteen rind powder were used. The inclusion of 66 g and 100 g of mangosteen rind powder per kg of feed in the diet of broiler chickens increased the total white blood cell count, heterophil count, lymphocyte concentration in the bursa of Fabricius and the spleen lymphatic node formation. Results show that mangosteen rind powder at 66 g/kg of feed and 100 g/ kg of feed enhances the immune system of broiler chickens.*

Keywords: Mangosteen rind powder, Broiler Chickens, Immune Response

Study 2. Performance of Broiler Chickens Fed Diets with Different Levels of Mangosteen (*Garcinia mangostana* Linn.) Rind Powder[7]

Julius Jerome G. Ele[2], Josephine R. Migalbin[3], Elma G. Sepelagio[4] and Peter Greame F. Lacia[6]

ABSTRACT. *Mangosteen is a tropical fruit known to have therapeutic and medicinal properties. The beneficial effects of mangosteen include antioxidant, anti-inflammatory, antihistamine, antibacterial, antifungal, anticancer, antiviral, antidiabetic, nerve, blood,*

---

1 The full study can be accessed from Asia Pacific Journal of Multidisciplinary Research, 6(2), 35-44

2 University of Southern Mindanao, Kabacan, Cotabato, Philippines 9407; jeromeele@yahoo.com

3 joshmig@yahoo.com

4 elmagsepelagio@gmail.com

5 vingelle.jimenez@fnu.ac.fj

6 petgreame@gmail.com

7 The full study can be accessed from NVSU Research Journal, 3(2), 5-10.

digestive and cardiovascular functions. The general objective of the study is to determine the performance of broiler chickens fed diets with different levels of mangosteen rind powder. The study was conducted in a Completely Randomized Design. A total of 100 birds for study 1 and 80 day old chicks for study 2 were randomly distributed into five different treatments namely, T1 – basal diet (corn-soya based) control, T2 – basal diet + commercial antioxidant, T3 – basal diet + 33g mangosteen rind powder/kg of feed, T4 – basal diet + 66g of mangosteen rind powder/kg of feed and T5 - 100g of mangosteen rind powder/kg of feed. There were no significant differences observed in the final weight, total feed intake, total weight gain, feed conversion efficiency, dressing percentage, livability, production number and index of broilers fed with five treatment diets.

No significant differences were noted in the broiler's cholesterol, High Density Lipoprotein (HDL) and Low Density Lipoprotein (LDL) levels at day 14 fed diets with different levels of mangosteen rind powder. Meanwhile, triglycerides level at day 14 and day 28, cholesterol, HDL and LDL levels at day 28 showed significant differences among treatment means. Weight of internal organs (heart, liver, and gizzard) relative to body weight showed no significant differences among treatment means for day 14 and day 28. For the cost and return analysis, highest return of investment was obtained by the birds fed with commercial antioxidant at 49.89%. This was followed by the control group at 47.34%. Treatment with 66g of MRP followed with 45.82%, then by treatment with 100g of MRP at 43.90%. Lastly, the 33g of MRP group had 40.06%. Feeding broilers with diets with different levels of mangosteen rind powder have shown similar growth performance results of mangosteen rind powder and those fed with commercial antioxidants. Moreover, the results have shown that the 66g of mangosteen rind powder and 100g of mangosteen rind powder are capable of decreasing the amounts of triglycerides, increasing the amounts of HDL and reducing the levels of LDL.

Dr. Julius Jerome G. Ele (Professor VI) is the current Dean of the College of Agriculture. His main areas of specialization include animal nutrition and feeding, poultry nutrition, management and production, swine nutrition, alternative feed or feed substitutes, and vermicomposting. He completed his PhD in Agricultural Science Major in Animal Science from the University of Southern Mindanao, and his MS in Animal Science from the University of Georgia in the United States, the latter under the Philippine Department of Agriculture and Fulbright Scholarship. He is a licensed agriculturist, ranking Top 2 in the Agriculturist Licensure Examination in 2014. He also has TM I certificates–National Certificate II in Organic Agriculture Production and in Animal Production. In 2014, he was awarded the Professional Achievement Award by the Province of Cotabato during its 100th Centennial Celebration