



Economic evaluation of broiler supplemented with fermented *Mansanitas (Muntingia calabura)* leaves



Regie Lloren

Institute of Agriculture, Camiguin Polytechnic State College, Catarman, Camiguin, Philippines

INTRODUCTION

- ❖ Plant extracts have been widely used as alternative for synthetic antibiotic growth promoters and have been found cost-efficient (Paul et al, 2020)
- ❖ *Muntingia calabura* Linn as indigenous plant specie in Southeast Asia like Indonesia, Malaysia and the Philippines (Mahmood et al, 2014) contains antibacterial (Sibi et al, 2012) and antioxidant properties (Mardikasari et al, 2020) which can be potential source natural growth promoter.
- ❖ Fermented plant leaves as natural growth promoters have recently gaining popularity (Sugiharto, 2021)
- ❖ Cost-efficiency in broiler production has been the primary objective.
- ❖ Thus, this study was carried out to provide economic analysis of broiler supplemented with Fermented *Muntingia calabura* leaves.

MATERIALS AND METHODS

The Experiment

- ❖ Conducted from October to November 2019 at Camiguin Polytechnic State College, Catarman, Camiguin, Philippines
- ❖ Employed Completely Randomized Design (CRD)
- ❖ 60 day-old chicks
- ❖ 4 treatments x 3 replications x 5 chicks per treatment

Table 1. Treatments employed to broiler diet

T1	Control (1.5 g Antibiotic/ L of water)
T2	10 mL FML/ L of water
T3	20 mL FML/ L of water
T4	30 mL FML/ L of water

Calculation of Gross margin per unit

$GM/ \text{unit} = TR - TOC$

$TR/ \text{unit} = \text{Sales of dressed chicken/ unit}$

$TOC/ \text{unit} = \text{Cost of Feeds, Supplement and Chick/ unit}$

where: GM/ unit – Gross Margin per unit; TR – Total Revenue; TOC – Total Operating Cost

GROSS MARGIN

=

TOTAL REVENUE

-



Feed Cost



Supplement Cost



Chick Cost

ACKNOWLEDGMENT

- ❖ The author would like to express his sincerest gratitude to Camiguin Polytechnic State College and to his former students, Rondel Oguimas, Jemar Gulane, and Jerald Cuarteros.

RESULTS AND DISCUSSION

Supplement Cost

- ❖ Findings revealed that chicks on T2, T3 and T4 supplement of Fermented *M. calabura* leaves (FML) had similar supplement cost but significantly ($p>0.01$) lower supplement cost than those of the control (T1).

Gross Margin per unit

- ❖ Results showed that chicks on T2 and T3 supplement of FML leaves had similar gross margin per unit but significantly ($p>0.01$) higher than T4 and control (T1).

- ❖ The benefit of FML supplement outweighs extra cost in supplement cost as it yielded higher gross margin as compared to the control. This extra cost can be associated with improved cost/benefit ratio(Esam Shanin et al, 2020).

Table 2. Economic evaluation of treatments employed

Economic Indicators	Treatments				F-test	cv (%)
	T1	T2	T3	T4		
Total Revenue (PhP)	181	194	193	182	ns	4.6
Feed Cost (PhP)	78.3	77.7	77	73.8	ns	4.0
Supplement Cost (PhP)	15 ^b	11.4 ^a	11.3 ^a	11.8 ^a	***	15
Chick Cost (PhP)	35	35	35	35	ns	0
Gross Margin/ unit (PhP)	52.3 ^a	69.3 ^b	70 ^b	61.7 ^{ab}	***	13.4

*** - ($p>0.01$)

ns – not significant

cv (%) – coefficient of variation

PhP – Philippine peso

CONCLUSIONS

- ❖ The current study provided surprising results of fermented *M. calabura* leaves (FML) in terms of supplement cost and gross margin per unit.
- ❖ It is concluded that 20 mL of FML as supplement yields best results in supplement costs and gross margin per unit parameters.
- ❖ This suggests a good and cheaper alternative of antibiotic in broiler diet. Hence, this supplement can be economical to use for broiler growers.

BIBLIOGRAPHY

- ❖ Esam Shahin, S., Ibrahim, D., & Badawi, M. (2020). Effects of phytogetic supplementation on productive and economic performance in broilers. *Journal of Animal Health and Production*, 9(s1).
- ❖ Mahmood, N. D., Nasir, N. L. M., Rofiee, M. S., Tohid, S. F. M., Ching, S. M., Teh, L. K., Salleh, M. Z., & Zakaria, Z. A. (2014). *Muntingia calabura*: A review of its traditional uses, chemical properties, and pharmacological observations. *Pharmaceutical Biology*, 52(12), 1598–1623.
- ❖ Mardikasari, S. A., Akib, N. i., Suryani, & Nahdiyati, R. (2020). Formulation and characterization of antioxidant phytosome gel of kersen leaves (*muntingia calabura* l.). *International Journal of Current Research and Review*, 12(23), 166–172.
- ❖ Paul, T. K., Hasan, M. M., Haque, M. A., Talukder, S., Sarker, Y. A., Sikder, M. H., Khan, M. A. H. N. A., Sakib, M. N., & Kumar, A. (2020). Dietary supplementation of neem (*azadirachta indica*) leaf extracts improved growth performance and reduced production cost in broilers. *Veterinary World*, 13(6), 1050–1055.
- ❖ Sibi, G., Naveen, R., Dhananjaya, K., Ravikumar, K. R., & Mallesha, H. (2012). Potential use of *muntingia calabura* l. Extracts against human and plant pathogens. *Pharmacognosy Journal*, 4(34), 44–47.
- ❖ SUGIHARTO, S. (2021). Fermented leaves in broiler rations: Effects on growth performance, physiological condition, and meat characteristics. *Acta Veterinaria Eurasia*, 47(1), 44–50.