PRODUCTION AND ECONOMIC PERFORMANCE OF BROILER CHICKENS *(Gallus domesticus)* WITH YEAST FERMENTED MATURED COCONUT WATER ADDED WITH MOLASSES AS DRINKING SUPPLEMENT

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CERTIFICATE OF PANEL APPROVAL

This research paper, entitled **"PRODUCTION AND ECONOMIC PERFORMANCE OF BROILER CHICKEN *(Gallus domesticus)* WITH YEAST FERMENTED MATURED COCONUT WATER ADDED WITH MOLASSES AS DRINKING SUPPLEMENT"**, prepared and submitted by KIRL ANDREY BANQUE, JOSHUA ALFRED MANOSA, MARY ROSE TOMPONG, in fulfillment of the requirements for the degree of **Bachelor of Science in Agriculture,** has been examined and is recommended for acceptance and approval.

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Mary Rose
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DEDICATION

We, the researchers, humbly dedicate this study to God Almighty for guidance, wisdom, and constant blessings that have led us to this moment of achievement. Without His grace, this endeavor would not have been possible.

To our dear parents, whose unwavering love, support, and encouragement have been our foundation during this journey. Their sacrifices and belief in us have been a constant source of strength, and we owe much of our success to their nurturing care.

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TABLE OF CONTENTS

	Page
TITLE PAGE	i
CERTIFICATE OF PANEL APPROVAL	ii
ACKNOWLEDGEMEMT	iii
DEDICATION	iv
TABLE OF CONTENTS	v
LIST OF TABLES	vi
LIST OF FIGURES	x
LIST OF APPENDICES	xi
ABSTRACT	xii
INTRODUCTION	
Background of the Study	1
Objectives of the Study	3
Hypotheses	4
Significance of the Study	4
Scope and limitation of the Study	5
Definition of Terms	6
MATERIALS AND METHODS	
Date and Place of the Study	9
Materials	9
Methods	10
Experimental Design	10
Factors and Treatments	10
Experimental Layout	11
Experimental Procedure	11
Care and Management Practices	12
Data Gathered	14
RESULTS AND DISCUSSION	
Growth Performance of Broiler Chicken	19
Feed Utilization of Broiler Chicken	20
Carcass Traits of Broiler Chicken	23
Economic Analysis of Broiler Chicken	25
CONCLUSION AND RECOMMENDATION	28
APPENDICES CITED	33
CURRICULUM VITAE	66

LIST OF TABLES

TABLE NO.	TITLE	PAGE
1	Treatment, treatment combinations, and treatment codes of the study on the Matured coconut water fermentation using Yeast in increasing the nutritive value of water on the growth performance of broiler chicken.	10
2	Vaccination and Deworming Program Schedule	14
3	Growth Performance of Broiler Chicken (Gallus domesticus) Applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.	20
4	Feed utilization applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.	22
5	Carcass traits applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.	24
6	Economic performance applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.	27
7	Data on the Growth Performance of Broiler Chicken (Gallus domesticus) Applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.	35
8	Data on Feed utilization of Broiler Chicken (Gallus domesticus) applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.	36
9	Data on Carcass traits of Broiler Chicken *(Gallus domesticus)* applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.	37
10	Data of Economic performance of Broiler Chicken *(Gallus domesticus)* applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.	38

11.a.	ANOVA on the Initial Weight of Broiler Chicken *(Gallus domesticus)* applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.	39
11.b.	ANOVA on the Final Weight of Broiler Chicken *(Gallus domesticus)* applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.	39
11.c	ANOVA on the Weight Gain of Broiler Chicken *(Gallus domesticus)* applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.	39
11.d	ANOVA on the Feed Consumption of Broiler Chicken *(Gallus domesticus)* applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement	40
12.a	ANOVA on the FCR of Broiler Chicken *(Gallus domesticus)* applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.	40
12.b	ANOVA on the FCE of Broiler Chicken *(Gallus domesticus)* applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement	40
12.c	ANOVA on the Carcass Weight of Broiler Chicken *(Gallus domesticus)* applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.	41
12.d	ANOVA on the Dressing Percentage of Broiler Chicken *(Gallus domesticus)* applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement	41
13.a	ANOVA on the Feed Cost of Broiler Chicken *(Gallus domesticus)* applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.	41
13.b	ANOVA on the Total Production Cost of Broiler Chicken *(Gallus domesticus)* applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.	42
13.c	ANOVA on the Gross Sale of Broiler Chicken *(Gallus domesticus*) applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement	42

13.d	ANOVA on the Net Income of Broiler Chicken *(Gallus domesticus*) applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.	42
13.e	ANOVA on the ROI of Broiler Chicken *(Gallus domesticus)* applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.	43
14.a	Overall Income Statement on Growth Performance of Broiler Chicken *(Gallus domesticus)* applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.	44
14.b	Income Statement on Broiler Chicken *(Gallus domesticus)* applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.	45
14.c	Income Statement on Broiler Chicken *(Gallus domesticus)* applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.	46
14.d	Income Statement on Broiler Chicken *(Gallus domesticus)* applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.	47
14.e	Income Statement on Broiler Chicken *(Gallus domesticus)* applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.	48
14.f	Income Statement on Broiler Chicken *(Gallus domesticus)* applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.	49
14.g	Income Statement on Broiler Chicken *(Gallus domesticus)* applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.	50
14.h	Income Statement on Broiler Chicken *(Gallus domesticus)* applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.	51

14.i Income Statement on Broiler Chicken *(Gallus domesticus)* applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement. 52

LIST OF FIGURES

FIG. NO.	TITLE	PAGE
1	Map showing the location of the study area (source: Google Earth); (A) Philippine map highlighting the province of Misamis Occidental; (B) Portion of Misamis Occidental map showing Ozamis city; (C) Aerial view of the experimental site.	9
2	Experimental Layout of the Study Using a Completely Randomized Design (CRD) with Three (3) Replication	34
3	Laboratory Test Result on Beverage, coded as not fermented	53
4	Laboratory Test Result on Beverage, coded as 5 days Fermentation on matured coconut water	54
5	Preparation of the Rearing Cages and the Poultry House for the Experiment.	55
6	Disinfecting the brooding area and the rearing cages	56
7	Mixing matured coconut water as a water supplement	58
8	Administering the Gumboro vaccine to broiler chickens before transferring	59
9	Fermentation of matured Coconut Water	60
10	Growth Performance Data Collection on Broiler Chickens (Initial Weight and Weekly Weight)	61
11	Growth Performance Data Collection on Broiler Chickens (Weekly Weight and Final Weight)	62
12	Growth Performance Data Collection on Broiler Chickens (Initial Weight and Weekly Weight)	63
13	Dressed chicken and data collection on carcass weight and Dressing percentage of broiler chicken.	64p

LIST OF APPENDICES

APPENDICES	TITLE	PAGE
APPENDIX A	Experimental Layout	34
APPENDIX B	Data Tables	35
APPENDIX C	ANOVA Tables	39
APPENDIX D	Income Statement	44
APPENDIX E	Analysis Report	53
APPENDIX F	Documentation	55
APPENDIX G	Turn It In Results	65

ABSTRACT

This study evaluated the effects of fermented, matured coconut water enriched with molasses on the growth performance, feed utilization, carcass traits, and economic performance of broiler chickens *(Gallus domesticus)*. The experiment was conducted at Banadero Farm, Misamis University, using a 4 × 2 factorial arrangements with an additional control treatment under a Completely Randomized Design (CRD) with three replications. Factor A consisted of different days of fermentation, while Factor B involved varying inclusion levels of fermented matured coconut water. The study was conducted over a 30-day feeding period. Parameters measured included initial weight, final weight, weight gain, feed conversion ratio (FCR), feed conversion efficiency (FCE), carcass traits, revenue, net income, and return on investment (ROI). Results revealed that supplementation with fermented matured coconut water did not significantly affect ($p > 0.05$) the growth performance, feed utilization, carcass traits, and economic performance of broiler chickens. Likewise, the interaction between fermentation days and supplementation levels showed no significant effects on most parameters, except for initial weight. However, numerical improvements were consistently observed in broilers supplemented with 5-day fermented matured coconut water at 20% inclusion level, particularly in terms of weight gain, feed efficiency, and economic returns. The findings suggest that fermented matured coconut water with yeast and molasses may be used as a supplementary drinking solution for broilers without adverse effects on performance. Although no statistically significant differences were observed, the positive numerical trends indicate their potential practical application in poultry production.

Keywords: *Broiler Chicken, Economic Performance, Fermented Matured Coconut Water, Yeast Fermentation, Feed Utilization,*

INTRODUCTION

Background of the Study

In the Philippines, the poultry industry was a major contributor to agriculture, ranking third among the country's most significant sectors. In 2021, total chicken production was estimated at 1.74 million metric tons (live weight), accounting for 12.5% of the total agricultural output (PSA, 2021). Broiler chickens comprised 34% of the total chicken inventory, reflecting a 5.5% increase from the previous year (PSA, 2021). Water played a crucial role in broiler health and performance, as it was essential for physiological processes, including nutrient transport, body temperature regulation, and metabolism (Fairchild & Ritz, 2009). Ensuring adequate water quality was fundamental for preventing disease and supporting flock performance, as broilers typically consumed 1.6 to 2.0 times more water than feed by weight—making water intake a valuable indicator of flock health and uniformity (Amaral, 2004; Fairchild & Ritz, 2009).

With water being such a critical factor in broiler productivity, poultry producers needed to provide high-quality water and ensure sufficient intake, especially during heat-stress periods. Quality factors influenced water consumption patterns (Barton, 1996), along with environmental temperature. When temperatures rose, broilers panted as a cooling mechanism, increasing water intake by about 7% per degree of temperature rise (Fairchild & Ritz, 2012). However, while tap water met basic hydration needs, it lacked the additional nutrients that could further support broiler health. This led to interest in coconut water as a locally available, nutrient-rich alternative that could provide both hydration and health

benefits, especially under stressful conditions. Coconut water (CW), the liquid endosperm found in coconuts, was rich in vitamins, amino acids, selenium, cytokinins (kinetin), and lauric acid (Bhagya et al., 2010). Studies showed that CW had antioxidant and antimicrobial properties (Rajan et al., 2016; Rukmini et al., 2017), along with a rich supply of minerals such as calcium, magnesium, potassium, and sodium. Bioactive compounds like L-arginine and vitamin C further supported cardiovascular health, reduced oxidative stress, and aided in rehydration (Bhagya et al., 2012; Kennedy et al., 2013; Halim et al., 2018; Zulaikhah, 2019). During periods of heat stress, CW's ability to lower body temperature and elevate blood glucose was particularly beneficial for broiler chickens (Abioja & Abiona, 2020).

The fermentation of coconut water using Saccharomyces cerevisiae was explored to enhance its quality and health benefits. This process resulted in alterations to sugar levels, increased production of organic acids, and improved antioxidant properties (Zhang et al., 2018). The fermentation process enhanced CW’s nutritional profile, enriching it with additional vitamins, enzymes, and beneficial compounds that improved gut health and nutrient absorption in broiler chickens.

Fermented coconut water exhibited enhanced antioxidant properties, correlating with increased total phenolic content (Zhang et al., 2018). The resulting product had an alcohol content of 7–8% and demonstrated improved shelf life compared to unfermented coconut water. Fermentation also led to the retention of active enzymes and amino acids, while introducing beneficial compounds with antibacterial and antioxidant properties (R. V., 2022). This study aimed to explore the impact of different levels of mature coconut water fermented with yeast on broiler growth performance, seeking to identify the most

effective concentration that promoted optimal nutrition and improved productivity. This approach offered an economical alternative for poultry farmers and aligned with sustainable farming practices by utilizing locally sourced resources. Furthermore, this study provided poultry producers with scientific evidence and practical guidance to help them decide whether fermented coconut water could be used in their operations to enhance productivity, improve animal welfare, and support environmentally sustainable practices.

Objective of the Study

The study aimed to investigate the effects of coconut water fermented with yeast added with molasses as drinking supplement on the growth performance of broiler chickens. Specifically, this study aimed to:

1. determine the growth performance in terms of initial weight, final weight, and weight gain of broiler chickens supplemented with matured coconut water fermented with yeast;
2. determine the feed utilization of broiler chickens supplemented with matured coconut water fermented with yeast;
3. determine the carcass traits of broiler chickens supplemented with matured coconut water applied with molasses fermented with yeast;
4. determine the economic performance of broiler chickens supplemented with matured coconut water applied with molasses fermented with yeast; and
5. determine the interaction between Factor A and Factor B in broiler chickens supplemented with matured coconut water applied with molasses fermented with yeast.

Hypothesis

This study tested the following hypothesis:

Null Hypothesis (Ho):

1. There was no significant difference in the growth performance in terms of initial weight, final weight, and weight gain of broiler chickens supplemented with matured coconut water fermented with yeast.
2. There was no significant difference in the feed utilization among broiler chickens supplemented with fermented matured coconut water.
3. There was no significant difference in the carcass traits of broiler chickens supplemented with matured coconut water fermented with yeast and molasses.
4. There was no significant difference in the economic performance of broiler chickens supplemented with matured coconut water fermented with yeast and molasses.
5. There was no significant interaction between Factor A and Factor B in broiler chickens supplemented with matured coconut water fermented with yeast and molasses.

Significance of the Study

Chickens required access to clean water at all times, especially during hot weather when they were prone to dehydration and heat stress. However, some chickens did not consume enough water, which impacted their health and growth. Tap water was essential for keeping chickens hydrated, but it did not supply the added nutrients available in coconut

water. Coconut water, on the other hand, not only hydrated but also provided a boost of vitamins, minerals, antioxidants, and other beneficial compounds that enhanced chickens' health and helped them cope with stress more effectively. Adding coconut water to their diet helped increase hydration and supported better health. Coconut water contained natural electrolytes that help manage heat stress, thereby promoting overall well-being in poultry.

In addition, fermenting coconut water with yeast and molasses significantly enhanced its nutritive value. The fermentation process introduced beneficial yeast strains, enriching the mixture with essential enzymes, probiotics, and metabolites, thereby improving digestive efficiency and nutrient absorption in broiler chickens. Molasses served as a nutrient source during fermentation, supporting yeast growth and further increasing the levels of vitamins, organic acids, and bioactive compounds in the supplement. This combination positively impacted gut health, immune response, and overall performance in broiler chickens.

This research analyzed the effects of fermented mature coconut water produced with yeast and molasses on the growth performance and blood parameters of broiler chickens. By assessing these factors, the study provided valuable insights into how this innovative and eco-friendly supplement enhanced broiler production. It was anticipated that the enriched supplement would improve growth rate and overall health profile of chickens, leading to more sustainable and efficient poultry farming practices.

Scope and limitations of the study

The study aimed to evaluate the effects of fermented, matured coconut water enriched with molasses on broiler chickens *(Gallus domesticus)*. The study was

Conducted at Bañadero Farm, Misamis University, and focused on key indicators such as growth performance, carcass traits, feed utilization, and economic performance of broiler chickens *(Gallus domesticus)*. The study will be laid out in a 4x2 factorial experiment with an additional control treatment using a Complete Randomized Design (CRD) with three (3) replications. The different dietary treatments were as follows: Factor A – Days of Fermentation with Matured Coconut Water with Yeast and Molasses and Factor B – Different levels of fermented matured coconut water. The objectives are to: (1) Determine the growth performance in terms of initial weight, final weight, and weight gain of broiler chickens supplemented with matured coconut water fermented with yeast. (2) Determine the feed utilization of broiler chickens supplemented with matured coconut water fermented with yeast. (3) Determine the carcass traits of broiler chickens supplemented with matured coconut water applied with molasses fermented with yeast. (4) Determine the economic performance of broiler chickens supplemented with matured coconut water applied with molasses fermented with yeast. (5) Determine the interaction between Factor A and Factor B in broiler chickens supplemented with matured coconut water applied with molasses fermented with yeast. Monitored chickens supplemented with fermented and non-fermented formulations over 30 days.

Definition of Terms

This section provided clear definitions of specialized terminology and concepts, helping readers understand the specific terms used in the research.

Bioactive Compounds referred to the naturally occurring chemical compounds in mature

coconut water that had health-promoting properties. They included antioxidants, amino acids, and enzymes that improved metabolism and immune responses.

A drinking supplement referred to an additive given to chickens through their drinking water. Drinking supplements like fermented coconut water with molasses aimed to provide extra nutrients and bioactive compounds, potentially improving growth rates, feed efficiency, and overall health.

Feed Conversion Ratio (FCR) refers to a measure of feed efficiency calculated by dividing the amount of feed intake by the weight gain. A lower FCR indicated better growth performance, as chickens required less feed to gain weight.

Fermentation is a biological process where microorganisms, such as bacteria or yeast, break down substances - in this case, fermenting mature coconut water with molasses, which enriched it with beneficial compounds (such as probiotics, enzymes, and organic acids) that positively affected broiler growth.

Growth Performance referred to the overall growth and health metrics of broiler chickens, including weight gain, feed intake, feed conversion ratio (FCR), and survival rate. It served as a primary indicator of how well chickens responded to dietary supplements.

Mature Coconut Water referred to the liquid found inside mature coconuts, known to contain minerals, vitamins, and bioactive compounds. When fermented, it acted as a natural growth enhancer by promoting gut health and potentially improving immunity in chickens.

Molasses refers to a thick, dark syrup by-product from sugar extraction in sugarcane or

sugar beet processing. It provided a rich source of sugars to support fermentation, creating a nutrient-rich supplement that improved broiler health and growth.

Probiotics and Organic Acids are by-products of the fermentation process that enhanced gut health and digestion. These compounds boosted nutrient absorption, reduced harmful bacteria, and supported immune function in broiler chickens.

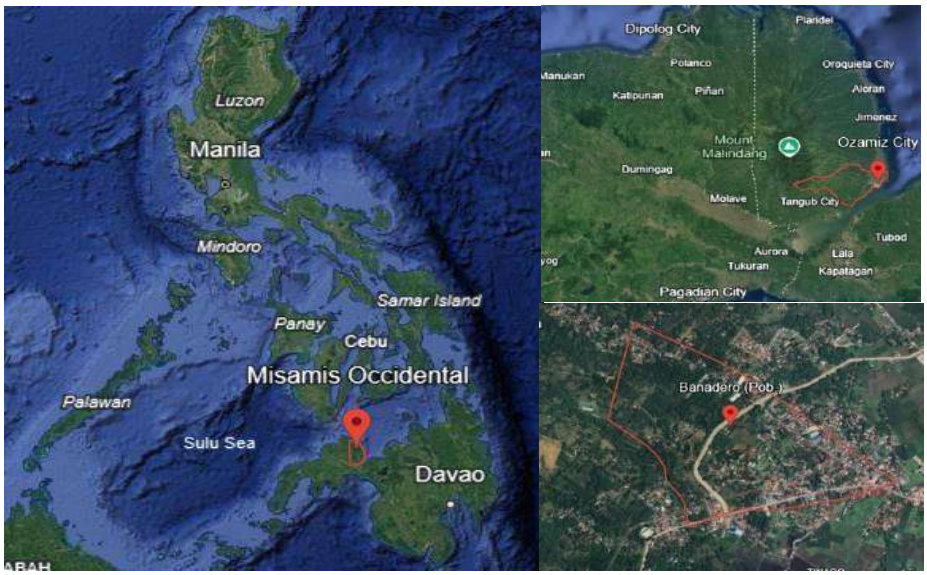
Fermenting with yeast involves introducing yeast to coconut water to promote fermentation, thereby enhancing its probiotic content, enzymatic activity, and nutritional value.

Alcohol content is measured by how much alcohol is in a given amount of an alcoholic beverage. Alcohol proof for distilled spirits is equal to twice the percentage of alcohol content by volume.

MATERIALS AND METHODS

Date and Place of the Study

The study was conducted at the Misamis University Experimental Site, located at Bañadero Farm in Ozamiz City, Misamis Occidental, from January to April 2025. (Fig. 1)



Map showing the location of the study area (source: Google Earth); (A) Philippine map highlighting the province of Misamis Occidental; (B) Portion of Misamis Occidental map showing Ozamiz city; (C)Aerial view of the experimental site

Materials

The materials needed for this study included one hundred forty-four (144) broiler chicks, commercial feeds, matured coconut water, molasses, and yeast for the fermentation process. Additional items included an incandescent light bulb, vitamins, antibiotics, poultry housing, brooding and rearing cages, a digital weighing scale, a record book and pen, plastic basins, plastic pails, metal drums, and certain laboratory equipment.

Methods

Experimental Design and Treatments

The study was laid out in a 4×2 factorial experiment using a Complete Randomized Design (CRD) with three (3) replications. (Table 1) the factors of the study were the days of fermentation of mature coconut water (Factor A) and plain water mixed with varying levels of fermented mature coconut water (Factor B).One hundred forty-four (144) growing broiler chickens were allocated, with six (6) heads distributed in each replication. The fermentation days (Factor A) included A1 (3 days) and A2 (5 days). The different levels of fermented matured coconut water (Factor B) included:

Treatments, Treatment Combinations, and Treatment Codes

Table 1. Treatment, treatment combinations, and treatment codes of the study on the Matured coconut water fermentation using Yeast in increasing the nutritive value water on the growth performance of broiler chicken

Days of Fermentation (Factor A)	Different Levels of Coconut Water (Factor B)	Treatment Combination	Treatment Code	Treatment #
A1 - 3 days	B1 – CONTROL	CONTROL	A1B1	T1
	B2 - 10% MCW	WSC-10% MCW, 3DoF	A1B2	T2
	B3 - 20% MCW	WSC-20% MCW, 3DoF	A1B3	T3
	B4 - 30% MCW	WSC-30% MCW, 3DoF	A1B4	T4
A2 - 5 days	B1 - CONTROL	CONTROL	A2B1	T5
	B2 - 10% MCW	WSC-10% MCW, 5DoF	A2B2	T6
	B3 - 20% MCW	WSC-20% MCW, 5DoF	A2B3	T7
	B4- 30% MCW	WSC-30% MCW, 5DoF	A2B4	T8

A1B1=Control, A1B2=3 days and 10% MCW, A1B3=3 days and 20% MCW, A1B4=3 days and 30% MCW, A2B1=Control, A2B2=5 days and 10% MCW, A2B3=5 days and 20% MCW, A2B4=5 days and 30% MCW

Experimental Layout

The study involved 144 broiler chickens in a 4×2 factorial experiment using CRD with three (3) replications. Each experimental unit contained six broiler chickens. Cage size: 4 ft × 2.5 ft, Space between cages: 2 ft, Aisle width: 3 ft between blocks. Orientation: East–West for proper ventilation. Each block had four treatment groups with six broiler chickens assigned to each treatment.

Experimental Procedure

Collection of Matured Coconut Water

To collect matured coconut water, the researchers first identified reliable sources, such as in Aloran, known for providing good-quality mature coconut water. Once suitable suppliers were identified, the researchers evaluated the quantity needed and negotiated pricing, payment terms, and delivery schedules.

Upon receiving the shipments, the researchers inspected the coconut water to ensure freshness, proper sealing, and absence of contamination. To preserve the quality and prevent spoilage, the matured coconut water was stored in a cool, dry place.

Fermentation of Matured Coconut Water Using Yeast

The fermentation process involved mixing 900 mL of coconut water, 100 mL of molasses, and 0.6 grams of yeast in sanitized, food-grade containers with airtight lids and airlock valves. The mixture was divided into portions and labeled according to fermentation duration. One batch was fermented for 3 days, , and another for 5 days. The fermentation process was closely monitored to achieve the optimal state for

supplementation

Water Intake of Fermented Matured Coconut Water

The fermented matured coconut water was prepared for inclusion in the drinking water of broiler chickens. The researchers conducted a water intake trial using inclusion levels of 10%, 20%, and 30% fermented coconut water by partially substituting plain water. This helped determine the most suitable inclusion level and its effect on broiler growth performance.

Care and Management Practices

Procurement of Broiler Chicks

A total of 144-day-old broiler chicks were purchased from a breeding farm in Misamis Occidental. All chicks came from the same batch and were hatched on the same day. They were examined to ensure they were healthy and disease-free before the experiment started.

Preparation of the Brooding Area

Before the arrival of the chicks, the brooding cage was thoroughly cleaned and sanitized. The floor was covered with fresh, dry materials such as rice husks and wood chips. Red heat lamps were turned on one hour before arrival to ensure proper temperature. Upon arrival, the chicks were given water mixed with dextrose or brown sugar to help them recover from transport stress. After one hour, they were fed commercial starter feed. The brooding area was properly ventilated, and sacks were used during cold periods to block cold air. The chicks stayed in the brooding area until they were 10 days old.

Rearing Management

At 11 days old, the broilers were transferred to rearing cages to begin the experimental phase. 24 cages corresponding to the treatments and replications. Each cage housed six chickens and measured 4 ft × 2.5 ft. The cages were cleaned daily to maintain a healthy environment. The chickens remained in these cages for 30 days.

Light Management

During brooding, six 25-watt red bulbs were used. In the rearing stage, each cage had one 25-watt bulb. Lighting was gradually reduced from 24 hours to 16 hours. An 8-hour nighttime lighting schedule was maintained throughout the study.

Feeding Management

The birds were fed ad libitum. Starter feed was provided during brooding, and grower feed during the rearing stage. Feeders were cleaned regularly to prevent contamination.

Water Management

During the first 10 days, chicks were given clean water with electrolytes, vitamins, and antibiotics. This was changed every other day. During the rearing stage, plain water was replaced with fermented matured coconut water according to the treatments. Water intake was monitored and recorded daily.

Harvesting

At 30 days, chickens that reached the ideal weight were harvested. They were placed in holding pens and were fasted before processing. The birds were slaughtered by

cutting the jugular veins and carotid arteries. Processing included defeathering, removal of head, feet, and internal organs, while avoiding contamination.

Disease Prevention, Treatment, and Control

Strict biosecurity measures were implemented. Access to brooding and rearing areas was restricted. Equipment and footwear were disinfected regularly. The chicks were vaccinated according to recommended schedules and were dewormed routinely. (Table 2)

Table 2. Vaccination and Deworming Program Schedule.

AGE	VACCINE	MODE OF APPLICATION
Day 5-7	Marek's (At hatchery)	S/C at Neck
Day 14	IBD Vaccine	Via Drinking Water
Day 16-18	New Castle Diseases	Via Drinking Water
Day 18	Fowl Pox	Via Wing Web
Day 28	IBD Vaccine Booster	Via Drinking Water

(Source: Google Search)

Data Gathered

The following data were gathered for the statistical analysis with their corresponding formulas:

A. **Growth Performance** of Broiler Chicken applied with Matured Coconut Water Fermented with Yeast as a drinking supplement. Parameters such as initial, final body weights, and weight gain were monitored to evaluate the effectiveness of the different feed treatments on chickens' growth performance.

    1. Initial Body Weight- Measured by weighing the birds at the start of the experiment.

2. Final Body Weight- Measured by weighing the birds at the end of the experiment.
3. Weight Gain- Calculated by subtracting the initial body weight from the final body weight.

$$\text{Weight Gain} = \text{Final Body Weight} - \text{Initial Body Weight}$$

B. **Feed Utilization** of Broiler Chicken applied with Matured Coconut Water Fermented with Yeast as a drinking supplement. This includes evaluating feed consumption, feed conversion ratio (FCR), and feed conversion efficiency (FCE).

1. Feed Consumption (g). This was determined by measuring the total amount of feed consumed per bird throughout the study period. Feed intake was recorded daily and summed over the entire experiment to assess the birds' feed consumption per treatment.
2. Feed Conversion Ratio (FCR). This was computed by dividing the total feed intake by the total weight gain. A lower FCR indicates better feed efficiency, meaning the birds required less feed to gain a unit of weight.

$$\text{Feed Conversion Ratio (FCR)} = \frac{\text{Feed Consumption (g)}}{\text{Weight Gain (g)}}$$

3. Feed Conversion Efficiency. This was determined as the reciprocal of the Conversion Ratio (FCR). It represents the efficiency with which the birds convert feed into body weight. A higher FCE indicates better feed utilization.

$$\text{Feed Conversion Efficiency (FCE)} = \frac{\text{Weight Gain (g)}}{\text{Feed Consumption (g)}}$$

C. **Carcass Traits** of Broiler Chicken applied with Matured Coconut Water Fermented with Yeast as a drinking supplement. The carcass traits of Broiler chickens were

evaluated by analyzing carcass weight and dressing percentage. These parameters were used to determine the impact of different feed treatments on meat yield and overall carcass quality.

1. Carcass Weight (g). This was measured by weighing the dressed carcass of Broiler chickens after slaughter. Following the standard marketing practice for Broiler Chickens in the local market, only the feathers were removed, while the head, feet, and internal organs remained intact.
2. Carcass Percentage- Calculated as the proportion of carcass weight to live weight: This will be calculated through the following formula:

$$\text{Carcass Percentage} = \frac{\text{Carcass Weight}}{\text{Live Weight}} \times 100$$

3. Dressing Percentage (%). This represents the proportion of the carcass weight relative to the live body weight of the chickens. It was calculated using the following formula:

$$\text{Dressing Percentage} = \frac{\text{Carcass Weight}}{\text{Live Weight}} \times 100\%$$

D. **Economic Analysis.** The economic analysis evaluated the cost effectiveness and profitability of feeding strategies for Broiler chickens. The parameters include calculations for feed cost, total production cost, revenue, net income, and return on investment (ROI).

1. Feed Cost (₱). The total feed cost was determined by summing the feed expenses incurred from the beginning to the end of the experiment.

2. Total Production Cost (₱). This was calculated by adding all production-related expenses, including housing, feed, chicks, healthcare, labor, and other operational costs.
3. Revenue (₱). This was computed based on the total income generated from selling the chickens at a standard market price of ₱220 per kilogram (carcass weight).
4. Net Income (₱). The net income was derived by subtracting the total production cost from the gross sales, as shown in the formula:

$$\text{Net Income} = \text{Gross Sales} - \text{Total Production Cost}$$

5. Return on Investment (ROI, %). ROI measures the profitability of the production system by comparing net income to the total production cost. It was calculated using the following formula:

$$\text{Return on Investment (ROI)} = \frac{\text{Net Income}}{\text{Cost of Production}} \times 100$$

Statistical Analysis

Descriptive statistics, including mean and standard deviation, were used to summarize the growth performance, feed utilization, carcass traits, and economic indicators of broiler chickens supplemented with fermented matured coconut water containing yeast and molasses. A two-way analysis of variance (ANOVA) under a factorial Completely Randomized Design (CRD) was employed to determine the main effects of fermentation duration of matured coconut water and inclusion level, as well as their interaction, on initial body weight, final body weight, weight gain, feed consumption, feed

conversion ratio (FCR), feed conversion efficiency (FCE), carcass weight, carcass percentage, dressing percentage, and economic parameters (feed cost, total production cost, revenue, net income, and return on investment [ROI]). Tukey's HSD was applied for post hoc comparisons where significant differences were found.

RESULT AND DISCUSION

The growth performance of broiler chickens (*Gallus domesticus*) supplemented with matured coconut water fermented with yeast and molasses is presented in Table 3. Broilers under A2 (5 days fermentation) showed higher mean final weight (1645.25 g) and weight gain (1368.58 g) compared to A1 (3 days fermentation) with 1595.13 g and 1322.67 g, respectively. However, analysis of variance indicated no significant differences ($p > 0.05$) in initial weight ($F = 0.447$), final weight ($F = 0.317$), and weight gain ($F = 0.131$).For different water mixtures, B3 (20% coconut water with yeast) yielded the highest final weight (1657.19 g) and weight gain (1377.94 g), whereas B4 (30%) showed the lowest values. Statistical analysis likewise revealed no significant differences ($p > 0.05$) in initial weight ($F = 0.256$), final weight ($F = 0.561$), and weight gain ($F = 0.567$).

Table 3. Growth Performance of Broiler Chicken (Gallus domesticus) Applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.

TREATMENTS	IW	FW	WG
Days of Fermentation			
A_1	272.46±13.46160	1595.13±98.56539	1322.67±89.56155
A_2	276.67±19.46625	1645.25±59.17249	1368.58±47.32780
F-test	.447	.317	.131
Different Water Mixture			
B_1	280.28±16.51600	1618.11±138.76462	1337.83±126.04439
B_2	266.11±15.88225	1612.47±55.24511	1346.36±53.39792
B_3	279.25±15.10571	1657.19±47.21447	1377.94±33.38672
B_4	272.61±18.56212	1592.97±71.74458	1320.36±56.20242
F-test	.256	.561	.567
AxB	.013	.169	.255

[a,b,c,d] Means within a column with different superscripts differ significantly. F-test = probability value of treatment effects (*$p < 0.13$; NS: Not significant). Values are presented as mean values. A_1 = 3 days fermentation; A_2 = 5 days fermentation; B_1 = Water (W); B_2 = 10% CW with yeast; B_3 = 20% CW with yeast; B_4 = 30% CW with yeast; AxB = interaction effect between days of fermentation and different coconut water mixtures; CW = Coconut Water.

The interaction effect (A × B) showed no significant differences ($p > 0.05$) in final weight ($F = 0.169$) and weight gain ($F = 0.255$), although a significant interaction was observed in initial weight ($F = 0.013$). Overall, treatments did not significantly affect growth performance, despite numerical trends favoring 5-day fermentation and 20% inclusion level.

The absence of significant differences suggests that fermented coconut water supplementation did not substantially affect broiler growth performance under the conditions of this study. Nevertheless, the numerical improvements observed in A2 and B3 treatments indicate a possible positive effect of optimal fermentation duration and moderate inclusion levels. This implies that coconut water supplementation may enhance performance trends without producing strong statistical effects.

The results align with Undefined et al. (2023), showing that fermenting coconut by-products can enhance feed quality, with longer fermentation (5 days) giving better outcomes than shorter periods (3 days). However, they differ from Soren et al. (2024), who reported significant improvements in broiler growth using *Saccharomyces cerevisiae*. This difference may be due to variations in supplementation form, dosage, and management conditions.

Additionally, studies such as those by Xin Zhu et al., (2023) demonstrated significant improvements in growth performance when fermented feed ingredients were included in broiler diets, emphasizing the stronger effect of solid fermented feed compared to liquid supplementation.

Table 4 presents the feed utilization of broiler chickens supplemented with

fermented matured coconut water containing yeast and molasses. In terms of days of fermentation, A2 (5 days) showed slightly improved feed efficiency, with a lower feed conversion ratio (FCR = 1.69) and higher feed conversion efficiency (FCE = 75.76%) compared to A1 (3 days) with FCR = 1.72 and FCE = 75.14%. However, statistical analysis revealed no significant differences ($p > 0.05$) in FCR ($F = 0.544$) and FCE ($F = 0.783$).

Across different water mixtures, B4 (30% coconut water with yeast) had the best numerical FCR (1.66) and highest FCE (77.97%), while B1 (0%) had the poorest efficiency (FCR = 1.78; FCE = 71.98%). Despite these variations, no significant differences ($p > 0.05$) were observed in FCR ($F = 0.369$) and FCE ($F = 0.316$).

Table 4. Feed utilization applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.

TREATMENTS	Feed Consumed / Bird	FCR	FCE
Days of Fermentation			
A_1	2265.48±123.02958	1.72±.12986	75.14±5.83551
A_2	2313.83±142.43986	1.69±.08544	75.76±4.85383
F-test		.544	.783
Different Water Mixture			
B_1	2364.03±163.05397	1.78±.15821	71.98±6.69782
B_2	2282.19±85.61527	1.70±.04719	75.60±2.42880
B_3	2316.16±134.93542	1.68±.12111	76.26±6.47105
B_4	2196.25±102.95295	1.66±.06124	77.97±3.41756
F-test		.369	.316
AxB		.615	.716

[a,b,c,d] Means within a column with different superscripts differ significantly. F-test = probability value of treatment effects (NS: Not significant). Values are presented as mean values. A_1 = 3 days fermentation; A_2 = 5 days fermentation; B_1 = Water (W) with yeast; B_2 = 10% CW with yeast; B_3 = 20% CW with yeast; B_4 = 30% CW with yeast; AxB = interaction effect between days of fermentation and different coconut water mixtures; FCR = Feed Conversion Ratio; FCE = Feed Conversion Efficiency; CW = Coconut Water.

The interaction effect (A × B) also showed no significant differences ($p > 0.05$) in FCR ($F = 0.615$) and FCE ($F = 0.716$). Overall, treatments did not significantly affect feed utilization, although numerical trends suggest improved efficiency at longer fermentation

duration and higher inclusion levels. The results indicate that supplementation with fermented coconut water did not significantly influence feed utilization parameters, although numerical improvements in FCR and FCE were observed, particularly in the 5-day fermentation and higher inclusion treatments. The improved efficiency in these treatments may be attributed to the potential role of fermentation in enhancing nutrient availability and promoting beneficial microbial activity.

Similarly, the results align with those of Nuwantara et al. (2022), who observed that fermented coconut by-products improved feed quality and digestibility, leading to better feed efficiency. However, they also noted that such improvements are often influenced by fermentation conditions and inclusion levels, which may explain the non-significant results in the present study.

In contrast, the findings differ from those of Soren et al., 2024, who reported significant improvements in FCR and nutrient utilization in broilers supplemented with *Saccharomyces cerevisiae*. Their study attributed the improvement to enhanced gut health and enzyme production, which facilitated nutrient absorption. The discrepancy may be due to differences in the form of supplementation, as their study used yeast additives directly in feed rather than fermented liquid supplements.

Furthermore, Predesco et al. (2024) found that fermented feed significantly improved feed conversion efficiency in broilers, highlighting that solid-state fermentation may have a more pronounced effect compared to liquid supplementation. This difference in delivery method may explain why only numerical improvements were observed in the present study.

Table 5 presents the carcass traits of broiler chickens supplemented with fermented matured coconut water containing yeast and molasses. In terms of fermentation duration, A2 (5 days) yielded higher carcass weight (1345.26 g) and dressing percentage (81.74%) compared to yielded higher carcass weight (1345.26 g) and dressing percentage (81.74%) compared to A1 (3 days), which recorded 1295.13 g and 81.12%, respectively. However, statistical analysis showed no significant differences ($p > 0.05$) in carcass weight ($F = 0.137$) and dressing percentage ($F = 0.134$).

Table 5. Carcass traits applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.

TREATMENTS	Carcass Weight	Dressing %
Days of Fermentation		
A_1	1295.13±98.56539	81.12±1.24405
A_2	1345.26±59.94404	81.74±.65614
F-test	.137	.134
Different Water Mixture		
B_1	1318.11±138.76462	81.34±1.72539
B_2	1312.48±55.24511	81.38±.64334
B_3	1357.19±47.21447	81.88±.51992
B_4	1292.99±71.76257	81.13±.88798
F-test	.561	.589
AxB	.169	.181

[a,b,c,d] Means within a column with different superscripts differ significantly. F-test = probability value of treatment effects (NS: Not significant). Values are presented as mean values. A_1 = 3 days fermentation; A_2 = 5 days fermentation; B_1 =Water (W) with yeast; B_2 = 10% CW with yeast; B_3 = 20% CW with yeast; B_4 = 30% CW with yeast; AxB = interaction effect between days of fermentation and different coconut water mixtures. CW = Coconut Water; Dressing % = dressing percentage.

Among the different water mixtures, B3 (20% coconut water with yeast) produced the highest carcass weight (1357.19 g) and dressing percentage (81.88%), while B4 (30%) had the lowest carcass weight (1292.99 g) and dressing percentage (81.13%). Despite these numerical variations, no significant differences ($p > 0.05$) were observed in carcass weight ($F = 0.561$) and dressing percentage ($F = 0.589$). The interaction effect (A × B) likewise

showed no significant differences ($p > 0.05$) for carcass weight ($F = 0.169$) and dressing percentage ($F = 0.181$). Overall, the treatments did not significantly affect carcass characteristics, although improved numerical values were observed in the 5-day fermentation and 20% inclusion treatments. The absence of significant differences in carcass weight and dressing percentage indicates that supplementation with fermented coconut water did not markedly influence carcass traits of broiler chickens. However, the numerical improvements observed in A2 and B3 treatments suggest a potential positive effect of optimal fermentation duration and moderate inclusion levels.

These findings are consistent with Cordova (2022), who reported that coconut water supplementation in broilers did not significantly affect carcass yield, although slight numerical improvements were observed. This suggests that coconut water may contribute to carcass development without exerting strong statistical effects.Similarly, Somkuna et al. (2025) found that fermented coconut by-products did not significantly influence carcass characteristics, despite improvements in nutrient availability. They noted
that carcass traits are less responsive to dietary changes compared to growth performance, which may explain the non-significant results in the present study.

In contrast, Poberezhets et al., 2023 reported that supplementation with *Saccharomyces cerevisiae* significantly improved carcass weight and dressing percentage due to enhanced nutrient absorption and gut health. The discrepancy may be attributed to differences in supplementation form and dosage, as their study incorporated yeast directly into feed rather than as a fermented liquid supplement.

Furthermore, Palupi et al., (2023) observed significant improvements in carcass yield when fermented feed was used, highlighting the greater impact of solid-state

fermentation on carcass traits compared to liquid supplementation. This difference in method of administration may explain the lack of significant effects observed in the present study.

Table 6 presents the economic analysis of broiler chickens supplemented with matured coconut water fermented with yeast and molasses. In terms of fermentation duration, A2 (5 days) resulted in higher revenue (₱1775.74), net income (₱470.44), and return on investment (ROI = 36.04%) compared to A1 (3 days), which recorded ₱1709.57 revenue, ₱415.69 net income, and 32.11% ROI. However, statistical analysis revealed no significant differences ($p > 0.05$) in total feed cost ($F = 0.384$), total production cost ($F = 0.384$), revenue ($F = 0.137$), net income ($F = 0.185$), and ROI ($F = 0.215$).

Among different water mixtures, B3 (20% coconut water with yeast) obtained the highest revenue (₱1791.50), net income (₱485.64), and ROI (37.28%), while B4 (30%) had the lowest production cost (₱1277.50) but relatively lower revenue. Despite these numerical differences, no significant effects ($p > 0.05$) were observed in total feed cost ($F = 0.205$), total production cost ($F = 0.205$), revenue ($F = 0.561$), net income ($F = 0.667$), and ROI ($F = 0.656$).

The interaction effect (A × B) likewise showed no significant differences ($p > 0.05$) across all economic parameters. Overall, treatments did not significantly affect economic performance, although better numerical results were observed in the 5-day fermentation and 20% inclusion level.

The non-significant differences in economic parameters suggest that supplementation with fermented coconut water did not substantially alter production costs or profitability. However, the higher numerical values in revenue, net income, and ROI

under A2 and B3 treatments indicate a potential economic advantage at optimal fermentation duration and moderate inclusion levels.

The findings agree with Fahrodi et al. (2025), showing that coconut water supplementation can improve income and profitability trends, but the economic impact may not be statistically significant.

Similarly, Bana & Zsédely (2025) observed that fermented coconut by-products can reduce feed costs and improve economic returns by improving nutrient utilization. However, the magnitude of improvement depends on the level of inclusion and processing method. This aligns with the present study, where moderate inclusion (20%) yielded better economic outcomes. Ismael et al. (2022) reported higher profitability with *Saccharomyces cerevisiae* due to improved growth and feed efficiency, likely because they used direct yeast inclusion rather than liquid fermentation. Similarly, Katu et al. (2025) found greater economic benefits from fermented feed, possibly due to the stronger effects of solid-state fermentation on nutrient availability.

Table 6. Economic performance applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.

TREATMENTS	₱ TFC	₱ TPC	₱ R	₱ NI	₱ROI
Days of Fermentation					
A_1	535.56±29.08478	1293.87±29.08478	1709.57±130.10761	415.69±122.56961	32.11±9.41866
A_2	546.99±33.67173	1305.30±33.67173	1775.74±79.12703	470.44±65.87266	36.04±4.96267
F-test	.384	.384	.137	.185	.215
Different Water Mixture					
B_1	558.86±38.54483	1317.17±38.54483	1739.91±183.17257	422.74±165.02933	32.00±12.32134
B_2	539.51±20.23764	1297.82±20.23764	1732.47±72.92400	434.65±60.44807	33.47±4.41498
B_3	547.54±31.89844	1305.85±31.89844	1791.50±62.31982	485.64±77.13977	37.28±6.46899
B_4	519.19±24.33919	1277.50±24.33919	1706.74±94.72682	429.24±79.80439	33.56±6.03646
F-test	.205	.205	.561	.667	.656
AxB	.782	.782	.169	.201	.299

[a,b,c,d] Means within a column with different superscripts differ significantly. F-test = probability value of treatment effects (NS: Not significant). Values are presented as mean values. A_1 = 3 days fermentation; A_2 = 5 days fermentation; B_1 = 0% Coconut Water (CW) with yeast; B_2 = 10% CW with yeast; B_3 = 20% CW with yeast; B_4 = 30% CW with yeast; AxB = interaction effect between days of fermentation and different coconut water mixtures. ROI = Return on Investment; CW = Coconut Water.

CONCLUSION AND RECOMMENDATION

1. The study found that supplementation of matured coconut water fermented with yeast and molasses did not significantly affect ($p > 0.05$) the growth performance of broiler chickens in terms of initial weight, final weight, and weight gain. However, numerical improvements were observed, particularly in broilers given 5-day fermentation and 20% inclusion level, indicating a possible beneficial effect under optimal conditions.

2. In terms of feed utilization, there were no significant differences in feed conversion ratio (FCR) and feed conversion efficiency (FCE) among treatments. Despite this, better numerical feed efficiency was observed in broilers receiving longer fermentation duration and higher levels of supplementation, suggesting improved nutrient utilization.

3. The economic performance of broiler chickens, including revenue, net income, and return on investment (ROI), was not significantly influenced by the treatments. Nevertheless, higher economic returns were recorded in the 5-day fermentation and the 20% inclusion level, indicating potential practical benefits for poultry production.

4. The interaction between Factor A (days of fermentation) and Factor B (levels of supplementation) showed no significant effects on most parameters, except for initial weight. This implies that the combined factors did not significantly influence overall broiler performance, although observable trends favored moderate fermentation and inclusion levels.

5. Overall, while fermented coconut water supplementation did not produce statistically significant effects, the consistent numerical improvements across growth performance, feed utilization, and economic parameters suggest that it has potential as a supplementary

drinking solution, particularly at 5-day fermentation and 20% inclusion level, without causing negative effects on broiler chickens.

1. Since the study revealed no significant differences, poultry raisers may use fermented matured coconut water with yeast and molasses as a supplementary drinking option only, as it does not negatively affect broiler performance but also does not guarantee statistically significant improvements in growth, feed utilization, or economic return.
2. The use of 5-day fermentation and 20% inclusion level may still be considered in practice, as these treatments consistently showed better numerical performance, suggesting they could be more favorable under actual farm conditions despite the absence of statistical significance.
3. Future researchers are encouraged to improve experimental precision, and extend the study duration to better capture possible significant effects of fermented coconut water supplementation on broiler performance.
4. Further studies should explore alternative methods of application, such as incorporating fermented coconut water into feeds rather than drinking water, to enhance nutrient absorption and produce more pronounced effects on broiler growth and efficiency.
5. Additional research should focus on other performance indicators, such as gut health, microbial population, and blood parameters, to provide a more comprehensive understanding of how fermented coconut water may influence broiler physiology and overall productivity
6. Future studies may compare fermented matured coconut water with commercial probiotic supplements to determine its relative effectiveness and economic advantage in

broiler production.

7. Future researchers are encouraged to conduct sensory and meat quality evaluation, including tenderness, color, and shelf life, to determine whether fermented coconut water supplementation influence the quality of broiler meat.

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APPENDICES

APPENDIX A

Experimental Layout

Cage 12 / T2R2	Cage 13 / T1R3
Cage 11 / T5R1	Cage 14 / T7R1
Cage 10 / T8R2	Cage 15 / T5R3
Cage 9 / T3R3	Cage 16 / T7R2
Cage 8 / T8R3	Cage 17 / T7R3
Cage 7 / T4R3	Cage 18 / T4R1
Cage 6 / T8R1	Cage 19 / T6R2
Cage 5 / T5R2	Cage 20 / T4R2
Cage 4 / T6R1	Cage 21 / T1R2
Cage 3 / T3R1	Cage 22 / T2R3
Cage 2 / T3R2	Cage 23 / T2R1
Cage 1 / T1R1	Cage 24 / T6R3

Appendix Figure 2. Experimental Layout of the Study Using a Completely Randomized Design (CRD) with Three (3) Replication

APPENDIX B

Data Tables

Table 7. Data on the Growth Performance of Broiler Chicken (Gallus domesticus) Applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.

Fermentation	Different level of FMCW	Initial Weight	Final Weigh	Weight Gain
1	0	269.67	1544.50	1274.83
1	0	264.5	1377.67	1113.17
1	0	273.17	1675.33	1402.17
1	10	273.67	1676.67	1403.00
1	10	287.17	1641.00	1353.83
1	10	272.17	1549.67	1277.50
1	20	269.5	1603.83	1334.33
1	20	287.5	1688.83	1401.33
1	20	293.67	1695.67	1402.00
1	30	241	1463.50	1222.50
1	30	269.67	1650.33	1380.67
1	30	267.83	1574.50	1306.67
2	0	289.5	1680.83	1391.33
2	0	275.5	1656.00	1380.50
2	0	309.33	1774.33	1465.00
2	10	263.5	1655.17	1391.67
2	10	240	1607.17	1367.17
2	10	260.17	1545.17	1285.00
2	20	260.5	1599.83	1339.33
2	20	296.33	1706.67	1410.33
2	20	268	1648.33	1380.33
2	30	283	1599.00	1316.00
2	30	278	1605.83	1327.83
2	30	296.17	1664.67	1368.50

Fermentation: 3 days (1); 5 days (2)
Different levels of FMCW: Water (1); 10% FMCW (2); 20% FMCW (3); 30% FMCW (4)

APPENDIX B *(Continued)*

Data Tables

Table 8. Data on Feed utilization of Broiler Chicken (Gallus domesticus) applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.

Fermentation	Different level of FMCW	Feed Consumed	FCR	FCE
1	0	2219.33	1.74	74.15
1	0	2272	2.04	62.82
1	0	2444.16	1.74	72.12
1	10	2310.83	1.65	77.48
1	10	2300.33	1.70	75.20
1	10	2257	1.77	72.71
1	20	2493.83	1.87	66.92
1	20	2269.83	1.62	79.18
1	20	2186.33	1.56	83.14
1	30	2032.5	1.66	79.77
1	30	2262	1.64	78.36
1	30	2137.66	1.64	79.79
2	0	2588.33	1.86	66.62
2	0	2181	1.58	82.12
2	0	2479.33	1.69	74.01
2	10	2338.83	1.68	75.68
2	10	2362.66	1.73	73.40
2	10	2123.5	1.65	79.15
2	20	2325.33	1.74	73.37
2	20	2452.83	1.74	72.22
2	20	2168.83	1.57	82.71
2	30	2296.66	1.75	73.25
2	30	2282.5	1.72	74.49
2	30	2166.16	1.58	82.13

Fermentation: 3 days (1); 5 days (2)
Different levels of FMCW: Water (1); 10% FMCW (2); 20% FMCW (3); 30% FMCW (4)

APPENDIX B *(Continued)*

Data Tables

Table 9. Data on Carcass traits of Broiler Chicken (Gallus domesticus) applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.

Fermentation	Different level of FMCW	Carcass Weight	Dressing Percentage
1	0	1244.5	80.576
1	0	1077.67	78.224
1	0	1375.33	82.093
1	10	1376.67	82.108
1	10	1341	81.718
1	10	1249.67	80.641
1	20	1303.83	81.295
1	20	1388.83	82.236
1	20	1395.67	82.308
1	30	1163.5	79.501
1	30	1350.33	81.822
1	30	1274.5	80.946
2	0	1380.83	82.152
2	0	1356	81.884
2	0	1474.33	83.092
2	10	1355.17	81.875
2	10	1307.17	81.334
2	10	1245.17	80.585
2	20	1299.83	81.248
2	20	1406.67	82.422
2	20	1348.33	81.800
2	30	1299	81.238
2	30	1305.83	81.318
2	30	1364.76	81.984

Fermentation: 3 days (1); 5 days (2)
Different levels of FMCW: Water (1); 10% FMCW (2); 20% FMCW (3); 30% FMCW (4)

APPENDIX B *(Continued)*

Data Tables

Table 10. Data of Economic performance of Broiler Chicken (*Gallus domesticus*) applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.

Fermentation	Different level of FMCW	Feed Cost	Production Cost	Gross Sales	Net Income	ROI
1	0	39.4	1282.96	1642.74	359.78	28.04
1	0	39.4	1295.41	1422.52	127.11	9.81
1	0	39.4	1336.11	1815.44	479.33	35.87
1	10	39.4	1304.59	1817.20	512.61	39.29
1	10	39.4	1302.11	1770.12	468.01	35.94
1	10	39.4	1291.86	1649.56	357.70	27.69
1	20	39.4	1347.85	1721.06	373.20	27.69
1	20	39.4	1294.90	1833.26	538.36	41.58
1	20	39.4	1275.16	1842.28	567.13	44.47
1	30	39.4	1238.79	1535.82	297.03	23.98
1	30	39.4	1293.05	1782.44	489.39	37.85
1	30	39.4	1263.65	1682.34	418.69	33.13
2	0	39.4	1370.19	1822.70	452.50	33.02
2	0	39.4	1273.90	1789.92	516.02	40.51
2	0	39.4	1344.42	1946.12	601.69	44.75
2	10	39.4	1311.21	1788.82	477.61	36.43
2	10	39.4	1316.84	1725.46	408.62	31.03
2	10	39.4	1260.31	1643.62	383.32	30.41
2	20	39.4	1308.02	1715.78	407.76	31.17
2	20	39.4	1338.16	1856.80	518.65	38.76
2	20	39.4	1271.02	1779.80	508.77	40.03
2	30	39.4	1301.24	1714.68	413.44	31.77
2	30	39.4	1297.89	1723.70	425.80	32.81
2	30	39.4	1270.39	1801.48	531.09	41.81

Fermentation: 3 days (1); 5 days (2)

Different levels of FMCW: Water (1); 10% FMCW (2); 20% FMCW (3); 30% FMCW (4)

APPENDIX C

ANOVA Tables

Table 11a. ANOVA on the Initial Weight of Broiler Chicken (*Gallus domesticus*) applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.

Source	SS	df	MS	F	Sig.
Factor A	106.176	1	106.176	.607	.447
Factor B	779.025	3	259.675	1.486	.256
Factor A * Factor B	2585.885	3	861.962	4.931	.013
Error	2796.733	16	174.796		
Total	1815508.39	24			

a. R Squared = .554 (Adjusted R Squared = .359)

Table 11b. ANOVA on the Final Weight of Broiler Chicken (*Gallus domesticus*) applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.

Source	SS	df	MS	F	Sig.
Factor A	15075.094	1	15075.094	2.456	.137
Factor B	13043.592	3	4347.864	.708	.561
Factor A * Factor B	35153.413	3	11717.804	1.909	.169
Error	98192.148	16	6137.009		
Total	63161645.09	24			

a, R Squared = .392 (Adjusted R Squared = .126)

Table 11c. ANOVA on the Weight Gain of Broiler Chicken (Gallus domesticus) applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
FactorA	790.547	1	790.547	2.529	.131
FactorB	653.574	3	217.858	.697	.567
FactorA * FactorB	1398.764	3	466.255	1.491	.255
Error	5001.918	16	312.620		
Total	2723913.510	24			

a. R Squared = .362 (Adjusted R Squared = .083)

APPENDIX C (Continued)

ANOVA Tables

Table 11d. ANOVA on the Feed Consumption of Broiler Chicken (*Gallus domesticus*) applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.

Source	SS	df	MS	F	Sig.
Factor A	14024.401	1	14024.401	.800	.384
Factor B	90086.440	3	30028.813	1.712	.205
Factor A * Factor B	18978.480	3	6326.160	.361	.782
Error	280614.365	16	17538.398		
Total	126224367.315	24			

a. R Squared = .305 (Adjusted R Squared = .001)

Table 12a. ANOVA on the FCR of Broiler Chicken (*Gallus domesticus*) applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.

Source	SS	df	MS	F	Sig.
Factor A	.005	1	.005	.385	.544
Factor B	.042	3	.014	1.124	.369
Factor A * Factor B	.023	3	.008	.616	.615
Error	.200	16	.013		
Total	70.039	24			

a. R Squared = .259 (Adjusted R Squared = -.065)

Table 12b. ANOVA on the FCE of Broiler Chicken (*Gallus domesticus*) applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.

Source	SS	df	MS	F	Sig.
Factor A	2.350	1	2.350	.079	.783
Factor B	114.520	3	38.173	1.277	.316
Factor A * Factor B	41.041	3	13.680	.458	.716
Error	478.179	16	29.886		
Total	137259.442	24			

a. R Squared = .248 (Adjusted R Squared = -.081)

APPENDIX C (Continued)

ANOVA Tables

Table 12c. ANOVA on the Carcass Weight of Broiler Chicken (*Gallus domesticus*) applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.

Source	SS	df	Mean Square	F	Sig.
Factor A	15079.605	1	15079.605	2.457	.137
Factor B	13038.694	3	4346.231	.708	.561
Factor A * Factor B	35154.338	3	11718.113	1.909	.169
Error	98199.624	16	6137.476		
Total	41991190.73	24			

a. R Squared = .392 (Adjusted R Squared = .126)

Table 12d. ANOVA on the Dressing Percentage of Broiler Chicken (*Gallus domesticus*) applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.

Source	SS	df	MS	F	Sig.
Factor A	2.313	1	2.313	2.494	.134
Factor B	1.835	3	.612	.660	.589
Factor A * Factor B	5.115	3	1.705	1.838	.181
Error	14.839	16	.927		
Total	159175.78	24			

a. R Squared = .384 (Adjusted R Squared = .115)

Table 13a. ANOVA on the Feed Cost of Broiler Chicken (*Gallus domesticus*) applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.

Source	SS	df	MS	F	Sig.
Factor A	783.755	1	783.755	.800	.384
Factor B	5034.698	3	1678.233	1.712	.205
Factor A * Factor B	1060.483	3	353.494	.361	.782
Error	15681.628	16	980.102		
Total	7054036.753	24			

a. R Squared = .305 (Adjusted R Squared = .001)

APPENDIX C (Continued)

ANOVA Tables

Table 13b. ANOVA on the Production Cost of Broiler Chicken (*Gallus domesticus*) applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.

Source	SS	df	MS	F	Sig.
Factor A	783.755	1	783.755	.800	.384
Factor B	5034.698	3	1678.233	1.712	.205
Factor A * Factor B	1060.483	3	353.494	.361	.782
Error	15681.628	16	980.102		
Total	40323054.980	24			
Corrected Total	22560.564	23			

a. R Squared = .305 (Adjusted R Squared = .001)

Table 13c. ANOVA on the Gross Sale of Broiler Chicken (*Gallus domesticus*) applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.

Source	SS	df	MS	F	Sig.
Factor A	26274.784	1	26274.784	2.457	.137
Factor B	22719.478	3	7573.159	.708	.561
FactorA*Factor B	61254.689	3	20418.230	1.909	.169
Error	171105.673	16	10694.105		
Total	73165460.28	24			

a. R Squared = .392 (Adjusted R Squared = .126)

Table 13d. ANOVA on the Net Income of Broiler Chicken (*Gallus domesticus*) applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.

Source	SS	df	MS	F	Sig.
Factor A	17981.543	1	17981.543	1.923	.185
Factor B	14929.541	3	4976.514	.532	.667
FactoA*FactorB	48472.458	3	16157.486	1.728	.201
Error	149585.678	16	9349.105		
Total	5022461.362	24			

a. R Squared = .352 (Adjusted R Squared = .069)

APPENDIX C (Continued)

ANOVA Tables

Table 13e. ANOVA on the ROI of Broiler Chicken (*Gallus domesticus*) applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.

Source	SS	df	MS	F	Sig.
Factor A	92.945	1	92.945	1.663	.215
Factor B	91.949	3	30.650	.548	.656
FactorA * FactorB	267.978	3	89.326	1.598	.229
Error	894.111	16	55.882		
Total	29855.741	24			

a. R Squared = .336 (Adjusted R Squared = .046)

APPENDIX D

Income Statement

Table 14.a. Overall Income Statement on Broiler Chicken (*Gallus domesticus*) applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.

Expenses		Items	Qty	Price
Operating Expenses				
	Chicks	144	45	6,480.00
	Starter Feeds	2	1970	3,940.00
	Booster	2	2015	4,030.00
	Finisher	3	1940	5,820.00
	Molasses	1	800	800.00
	Bulb	24	23	552.00
	Vitamins	2	25	50.00
	Antibiotics	1	70	70.00
	Dewormer	2	24	48.00
	Disinfectant	1.00	60	60.00
	Coconut Water	0	0	0
	Water and Electricity			3852
	Electrical Tape	1	30	30.00
	Dry Yeast	2	190	380.00
	Feeds	257.71	39.4	10,153.77
	Total			36,265.77
Capital Expenses				
	Receptacle	24	21	504.00
	Wire	15	40	600.00
	Trapal	2	800	1,600.00
	Housing			10,000.00
	Mail Plug	1	30	30.00
				12,734.00
Depreciation Cost	10 years			254.68
Total Production Cost				2,274.93
Gross Sales	Dressed Chicken (220/kg)	1.30	18	5,148.00
Net Income	Gross sales - Total Production Cost			2,873.07
				758.31

APPENDIX D *(Continued)*

Income Statement

Table 14.b. Income Statement on Broiler Chicken (*Gallus domesticus*) applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.

Expenses		Items	Qty	Price
Operating Expenses				
	Chicks	18	45	810.00
	Booster	0.25	2015	503.75
	Starter Feeds	0.25	1970	
	Fisher	0.375	1940	
	Molasses	0.125	800	100.00
	Bulb	3	23	69.00
	Vitamins	0.25	25	6.25
	Antibiotics	0.125	70	8.75
	Dewormer	0.25	24	6.00
	Disinfectant	0.13	60	7.50
	Coconut Water		0	
	Water and Electricity			481.50
	Electrical Tape	0.125	30	3.75
	Dry Yeast	0.25	190	23.75
	Feeds	32.21375	39.4	
	Total			2,020.25
Capital Expenses				
	Receptacle	4	35	140.00
	Wire	20	15	300.00
	Trapal	40	75	3,000.00
	Housing	6	1500	9,000.00
	Mail Plug	1	30	30.00
Depreciation Cost	10 years			254.68
Total Production Cost				2,274.93
Gross Sales	Dressed Chicken (220/kg)	1.3	18	5,148.00
Net Income	Gross sales - Total Production Cost			2,873.07
				758.31

APPENDIX D (Continued)

Income Statement

Table 14.c. Income Statement on Broiler Chicken (*Gallus domesticus*) applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.

Expenses		Items	Qty	Price
Operating Expenses				
	Chicks	18	45	810.00
	Booster	0.25	2015	503.75
	Starter Feeds	0.25	1970	
	Fisher	0.375	1940	
	Molasses	0.125	800	100.00
	Bulb	3	23	69.00
	Vitamins	0.25	25	6.25
	Antibiotics	0.125	70	8.75
	Dewormer	0.25	24	6.00
	Disinfectant	0.13	60	7.50
	Coconut Water		0	
	Water and Electricity			481.50
	Electrical Tape	0.125	30	3.75
	Dry Yeast	0.25	190	23.75
	Feeds	32.21375	39.4	
	Total			2,020.25
Capital Expenses				
	Receptacle	4	35	140.00
	Wire	20	15	300.00
	Trapal	40	75	3,000.00
	Housing	6	1500	9,000.00
	Mail Plug	1	30	30.00
Depreciation Cost	10 years			254.68
Total Production Cost				2,274.93
Gross Sales	Dressed Chicken (220/kg)	1.3	18	5,148.00
Net Income	Gross sales - Total Production Cost			2,873.07
				758.31

APPENDIX D (Continued)

Income Statement

Table 14.d. Income Statement on Broiler Chicken (*Gallus domesticus*) applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.

Expenses		Items	Qty	Price
Operating Expenses				
	Chicks	18	45	810.00
	Booster	0.25	2015	503.75
	Starter Feeds	0.25	1970	
	Fisher	0.375	1940	
	Molasses	0.125	800	100.00
	Bulb	3	23	69.00
	Vitamins	0.25	25	6.25
	Antibiotics	0.125	70	8.75
	Dewormer	0.25	24	6.00
	Disinfectant	0.13	60	7.50
	Coconut Water		0	
	Water and Electricity			481.50
	Electrical Tape	0.125	30	3.75
	Dry Yeast	0.25	190	23.75
	Feeds	32.21375	39.4	
	Total			2,020.25
Capital Expenses				
	Receptacle	4	35	140.00
	Wire	20	15	300.00
	Trapal	40	75	3,000.00
	Housing	6	1500	9,000.00
	Mail Plug	1	30	30.00
Depreciation Cost	10 years			254.68
Total Production Cost				2,274.93
Gross Sales	Dressed Chicken (220/kg)	1.3	18	5,148.00
Net Income	Gross sales - Total Production Cost			2,873.07
				758.31

APPENDIX D (Continued)

Income Statement

Table 14.e. Income Statement on Broiler Chicken (*Gallus domesticus*) applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.

Expenses		Items	Qty	Price
Operating Expenses				
	Chicks	18	45	810.00
	Booster	0.25	2015	503.75
	Starter Feeds	0.25	1970	
	Fisher	0.375	1940	
	Molasses	0.125	800	100.00
	Bulb	3	23	69.00
	Vitamins	0.25	25	6.25
	Antibiotics	0.125	70	8.75
	Dewormer	0.25	24	6.00
	Disinfectant	0.13	60	7.50
	Coconut Water		0	
	Water and Electricity			481.50
	Electrical Tape	0.125	30	3.75
	Dry Yeast	0.25	190	23.75
	Feeds	32.21375	39.4	
	Total			2,020.25
Capital Expenses				
	Receptacle	4	35	140.00
	Wire	20	15	300.00
	Trapal	40	75	3,000.00
	Housing	6	1500	9,000.00
	Mail Plug	1	30	30.00
Depreciation Cost	10 years			254.68
Total Production Cost				2,274.93
Gross Sales	Dressed Chicken (220/kg)	1.3	18	5,148.00
Net Income	Gross sales - Total Production Cost			2,873.07
				758.31

APPENDIX D (Continued)

Income Statement

Table 14.f. Income Statement on Broiler Chicken (*Gallus domesticus*) applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.

Expenses		Items	Qty	Price
Operating Expenses				
	Chicks	18	45	810.00
	Booster	0.25	2015	503.75
	Starter Feeds	0.25	1970	
	Fisher	0.375	1940	
	Molasses	0.125	800	100.00
	Bulb	3	23	69.00
	Vitamins	0.25	25	6.25
	Antibiotics	0.125	70	8.75
	Dewormer	0.25	24	6.00
	Disinfectant	0.13	60	7.50
	Coconut Water		0	
	Water and Electricity			481.50
	Electrical Tape	0.125	30	3.75
	Dry Yeast	0.25	190	23.75
	Feeds	32.21375	39.4	
	Total			2,020.25
Capital Expenses				
	Receptacle	4	35	140.00
	Wire	20	15	300.00
	Trapal	40	75	3,000.00
	Housing	6	1500	9,000.00
	Mail Plug	1	30	30.00
Depreciation Cost	10 years			254.68
Total Production Cost				2,274.93
Gross Sales	Dressed Chicken (220/kg)	1.3	18	5,148.00
Net Income	Gross sales - Total Production Cost			2,873.07
				758.31

APPENDIX D (Continued)

Income Statement

Table 14.g. Income Statement on Broiler Chicken (*Gallus domesticus*) applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.

Expenses		Items	Qty	Price
Operating Expenses				
	Chicks	18	45	810.00
	Booster	0.25	2015	503.75
	Starter Feeds	0.25	1970	
	Fisher	0.375	1940	
	Molasses	0.125	800	100.00
	Bulb	3	23	69.00
	Vitamins	0.25	25	6.25
	Antibiotics	0.125	70	8.75
	Dewormer	0.25	24	6.00
	Disinfectant	0.13	60	7.50
	Coconut Water		0	
	Water and Electricity			481.50
	Electrical Tape	0.125	30	3.75
	Dry Yeast	0.25	190	23.75
	Feeds	32.21375	39.4	
	Total			2,020.25
Capital Expenses				
	Receptacle	4	35	140.00
	Wire	20	15	300.00
	Trapal	40	75	3,000.00
	Housing	6	1500	9,000.00
	Mail Plug	1	30	30.00
Depreciation Cost	10 years			254.68
Total Production Cost				2,274.93
Gross Sales	Dressed Chicken (220/kg)	1.3	18	5,148.00
Net Income	Gross sales - Total Production Cost			2,873.07
				758.31

APPENDIX D (Continued)

Income Statement

Table 14.h. Income Statement on Broiler Chicken (*Gallus domesticus*) applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.

Expenses		Items	Qty	Price
Operating Expenses				
	Chicks	18	45	810.00
	Booster	0.25	2015	503.75
	Starter Feeds	0.25	1970	
	Fisher	0.375	1940	
	Molasses	0.125	800	100.00
	Bulb	3	23	69.00
	Vitamins	0.25	25	6.25
	Antibiotics	0.125	70	8.75
	Dewormer	0.25	24	6.00
	Disinfectant	0.13	60	7.50
	Coconut Water		0	
	Water and Electricity			481.50
	Electrical Tape	0.125	30	3.75
	Dry Yeast	0.25	190	23.75
	Feeds	32.21375	39.4	
	Total			2,020.25
Capital Expenses				
	Receptacle	4	35	140.00
	Wire	20	15	300.00
	Trapal	40	75	3,000.00
	Housing	6	1500	9,000.00
	Mail Plug	1	30	30.00
Depreciation Cost	10 years			254.68
Total Production Cost				2,274.93
Gross Sales	Dressed Chicken (220/kg)	1.3	18	5,148.00
Net Income	Gross sales - Total Production Cost			2,873.07
				758.31

APPENDIX D (Continued)

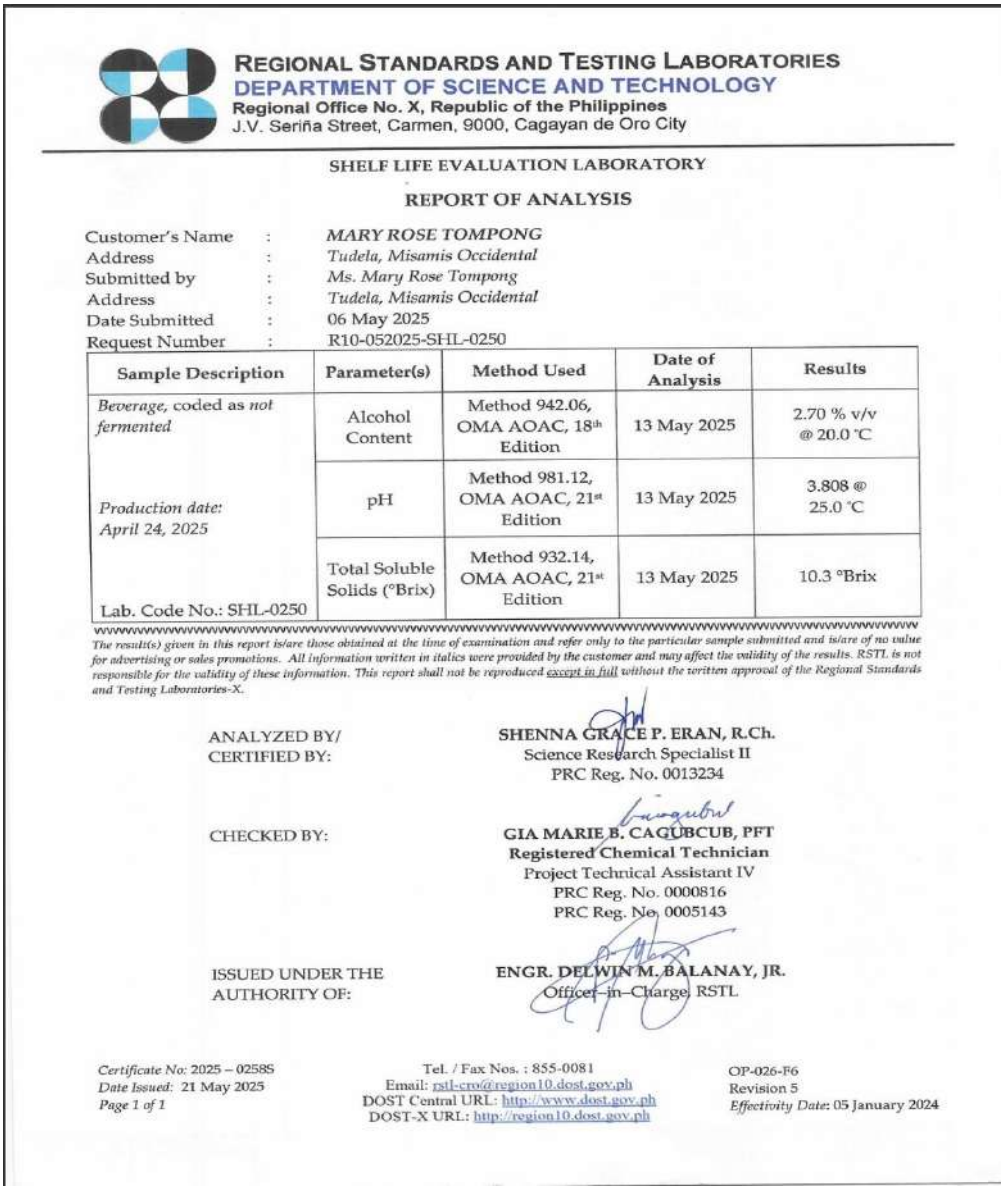
Income Statement

Table 14.i. Income Statement on Broiler Chicken (*Gallus domesticus*) applied with Matured Coconut Water Fermented with Yeast added with Molasses as Drinking Supplement.

Expenses		Items	Qty	Price
Operating Expenses				
	Chicks	18	45	810.00
	Booster	0.25	2015	503.75
	Starter Feeds	0.25	1970	
	Fisher	0.375	1940	
	Molasses	0.125	800	100.00
	Bulb	3	23	69.00
	Vitamins	0.25	25	6.25
	Antibiotics	0.125	70	8.75
	Dewormer	0.25	24	6.00
	Disinfectant	0.13	60	7.50
	Coconut Water		0	
	Water and Electricity			481.50
	Electrical Tape	0.125	30	3.75
	Dry Yeast	0.25	190	23.75
	Feeds	32.21375	39.4	
	Total			2,020.25
Capital Expenses				
	Receptacle	4	35	140.00
	Wire	20	15	300.00
	Trapal	40	75	3,000.00
	Housing	6	1500	9,000.00
	Mail Plug	1	30	30.00
Depreciation Cost	10 years			254.68
Total Production Cost				2,274.93
Gross Sales	Dressed Chicken (220/kg)	1.3	18	5,148.00
Net Income	Gross sales - Total Production Cost			2,873.07
				758.31

APPENDIX E

Analysis Report



REGIONAL STANDARDS AND TESTING LABORATORIES
DEPARTMENT OF SCIENCE AND TECHNOLOGY
Regional Office No. X, Republic of the Philippines
J.V. Seriña Street, Carmen, 9000, Cagayan de Oro City

SHELF LIFE EVALUATION LABORATORY

REPORT OF ANALYSIS

Customer's Name : *MARY ROSE TOMPONG*
Address : *Tudela, Misamis Occidental*
Submitted by : *Ms. Mary Rose Tompong*
Address : *Tudela, Misamis Occidental*
Date Submitted : 06 May 2025
Request Number : R10-052025-SHL-0250

Sample Description	Parameter(s)	Method Used	Date of Analysis	Results
Beverage, coded as not fermented	Alcohol Content	Method 942.06, OMA AOAC, 18th Edition	13 May 2025	2.70 % v/v @ 20.0 °C
Production date: April 24, 2025	pH	Method 981.12, OMA AOAC, 21st Edition	13 May 2025	3.808 @ 25.0 °C
Lab. Code No.: SHL-0250	Total Soluble Solids (°Brix)	Method 932.14, OMA AOAC, 21st Edition	13 May 2025	10.3 °Brix

The result(s) given in this report is/are those obtained at the time of examination and refer only to the particular sample submitted and is/are of no value for advertising or sales promotions. All information written in italics were provided by the customer and may affect the validity of the results. RSTL is not responsible for the validity of these information. This report shall not be reproduced except in full without the written approval of the Regional Standards and Testing Laboratories-X.

ANALYZED BY/
CERTIFIED BY: **SHENNA GRACE P. ERAN, R.Ch.**
Science Research Specialist II
PRC Reg. No. 0013234

CHECKED BY: **GIA MARIE B. CAGUBCUB, PFT**
Registered Chemical Technician
Project Technical Assistant IV
PRC Reg. No. 0000816
PRC Reg. No. 0005143

ISSUED UNDER THE
AUTHORITY OF: **ENGR. DELWIN M. BALANAY, JR.**
Officer-in-Charge, RSTL

Certificate No: 2025 – 02585
Date Issued: 21 May 2025
Page 1 of 1

Tel. / Fax Nos. : 855-0081
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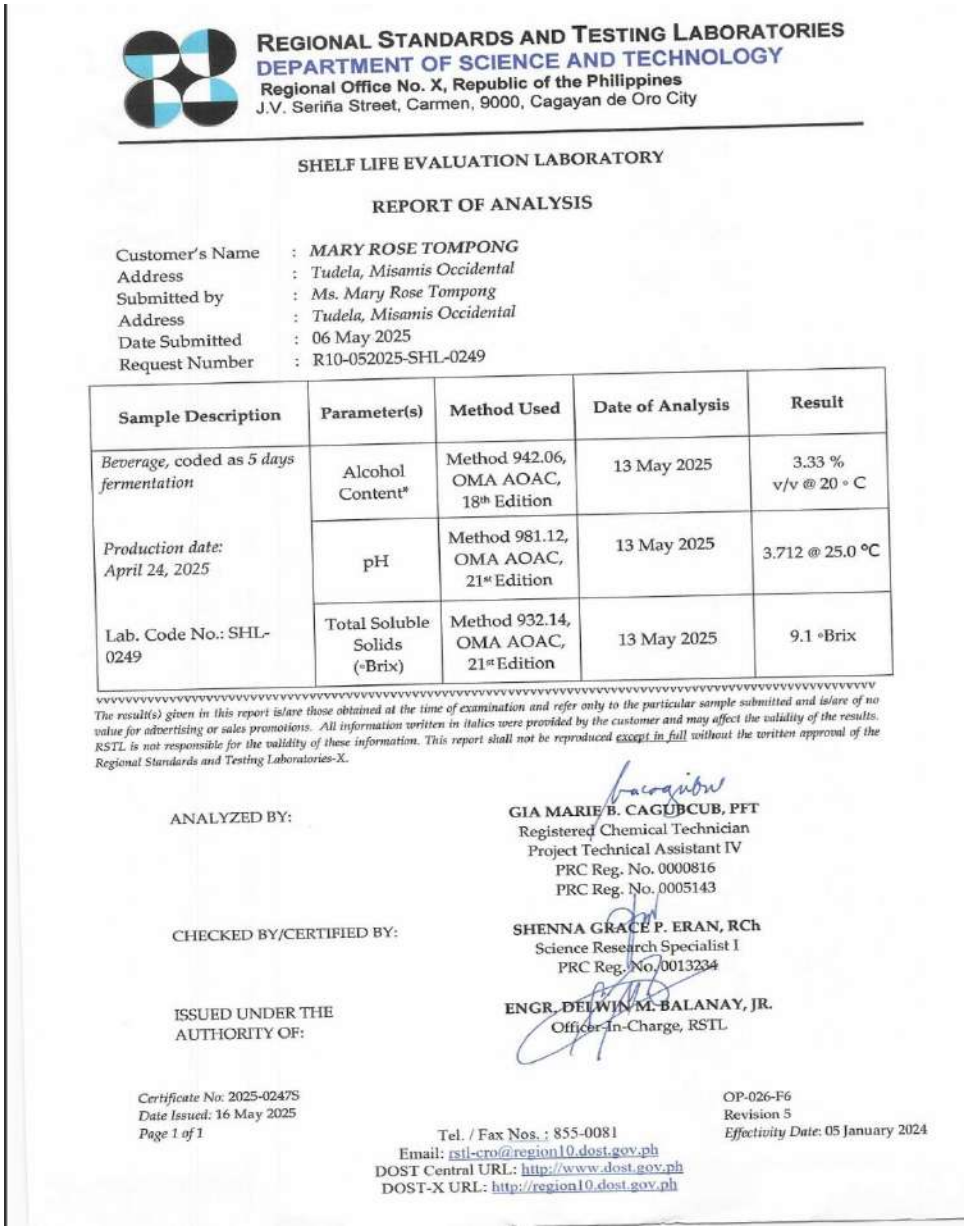
DOST Central URL: http://www.dost.gov.ph
DOST-X URL: http://region10.dost.gov.ph

OP-026-F6
Revision 5
Effectivity Date: 05 January 2024

Appendix Figure 3. Laboratory Test Result on
Conducted by the Department of Science and Technology - Regional Standards and Testing Laboratories (DOST-RSTL) Region 10

APPENDIX E *(Continued)*

Analysis Report



REGIONAL STANDARDS AND TESTING LABORATORIES
DEPARTMENT OF SCIENCE AND TECHNOLOGY
Regional Office No. X, Republic of the Philippines
J.V. Seriña Street, Carmen, 9000, Cagayan de Oro City

SHELF LIFE EVALUATION LABORATORY

REPORT OF ANALYSIS

Customer's Name : *MARY ROSE TOMPONG*
Address : *Tudela, Misamis Occidental*
Submitted by : *Ms. Mary Rose Tompong*
Address : *Tudela, Misamis Occidental*
Date Submitted : 06 May 2025
Request Number : R10-052025-SHL-0249

Sample Description	Parameter(s)	Method Used	Date of Analysis	Result
Beverage, coded as *5 days fermentation*	Alcohol Content*	Method 942.06, OMA AOAC, 18th Edition	13 May 2025	3.33 % v/v @ 20 ◦ C
Production date: April 24, 2025	pH	Method 981.12, OMA AOAC, 21st Edition	13 May 2025	3.712 @ 25.0 °C
Lab. Code No.: SHL-0249	Total Soluble Solids (◦Brix)	Method 932.14, OMA AOAC, 21st Edition	13 May 2025	9.1 ◦Brix

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ANALYZED BY:
GIA MARIE B. CAGUBCUB, PFT
Registered Chemical Technician
Project Technical Assistant IV
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PRC Reg. No. 0005143

CHECKED BY/CERTIFIED BY:
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Science Research Specialist I
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Officer-In-Charge, RSTL

Certificate No. 2025-0247S
Date Issued: 16 May 2025
Page 1 of 1

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Revision 5
Effectivity Date: 05 January 2024

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DOST Central URL: http://www.dost.gov.ph
DOST-X URL: http://region10.dost.gov.ph

Appendix Figure 4. Laboratory Test Result on
Conducted by the Department of Science and Technology - Regional Standards and Testing Laboratories (DOST-RSTL) Region 10

APPENDIX F

Documentation

Appendix Figure 5. Preparation of the Rearing Cages and the Poultry House for the Experiment.

APPENDIX F (Continued)

Documentation

Appendix 6. Disinfecting the brooding area and the rearing cages.

APPENDIX F (Continued)

Documentation

Appendix 6. Disinfecting the brooding area and the rearing cages.

APPENDIX F (Continued)

Documentation

Appendix 7. Mixing matured coconut water as a water supplement

APPENDIX F (Continued)

Documentation

Appendix 8. Administering the Gumboro vaccine to broiler chickens before transferring them to their rearing cage.

APPENDIX F (Continued)

Documentation

Appendix 9. Fermentation of matured Coconut Water

APPENDIX F (Continued)

Documentation

Appendix 10. Growth Performance Data Collection on Broiler Chickens

(Initial Weight and Weekly Weight)

APPENDIX F (Continued)

Documentation

Appendix 11. Data collection of the remaining water

APPENDIX F (Continued)

Documentation

Documentation Appendix 12. Growth Performance Data Collection on Broiler Chickens (Weekly Weight and Final Weight)

APPENDIX F (Continued)

Documentation

Appendix 13. Dressed chicken and data collection on carcass weight and Dressing percentage of broiler chicken.

APPENDIX G

Turn It In Results

MARY ROSE TOMPONG.docx

Misamis University

Document Details

Submission ID
trn:oid:::28447:139858352

Submission Date
May 21, 2026, 4:56 PM GMT+8

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APPENDIX G (Cont'd)

Grammarly Result

Tompongs-Group - GRAMMARLY

by Misamis University

General metrics

48,417	6,922	599	27 min 41 sec	53 min 14 sec
characters	words	sentences	reading time	speaking time

Writing Issues

✓ No issues found

Plagiarism

This text hasn't been checked for plagiarism

CURRICULUM VITAE

Name : Kirl Andrey P. Banque

Address : Naga, Jimenez, Misamis, Occidental

Date of Birth : October 4, 2003

Place of Birth : Ozamis City

Age : 22 years old

Nationality : Filipino

PERSONAL PARTICULAR

Civil Status : Single

Religion : IFI

Name of Parents : **Mother:** Margie P. Banque

: **Father:** Alberto C. Banque

EDUCATIONAL ATTAINMENT

Elementary : Lobogon Elementary School

: Lobogon, Aloran, Misamis Occidental (2014-2015)

Junior High School : Aloran Trade High School

: Aloran, Misamis, Occidental (2018-2019)

Senior High School : Aloran Trade High School

: Aloran, Misamis, Occidental (2019-2020)

College : Misamis University

: F.T Ozamis City, Misamis Occidental (2021-2026

CURRICULUM VITAE

Name **:** Mary Rose Tompong
Address **:** P- 7, Balon Tudela Mis. Occ.
Date of Birth **:** October 31,2002
Place of Birth **:** Tudela Mis. Occ.
Age **:** 23 years old
Nationality **:** Filipino

PERSONAL PARTICULAR

Civil Status **:** Single
Religion **:** The Lord's Recovery
Name of Parents **: Mother:** Jovita T. Tompong
:Guardian: Hilaria Q. Tompong

EDUCATIONAL ATTAINMENT

Elementary **:** Balon Elementary School
: P-1 Balon, Tudela Mis. Occ. (2015-2016)
Junior High School : (NMCCI)Northern Mindanao Christian Colleges
: Upper Centro Tudela Mis. Occ.
Senior High School **: (**NMCCI)Northern Mindanao Christian Colleges
: Upper Centro Tudela Mis. Occ.
College **:** Misamis University
: F.T Ozamis City, Misamis Occidental (2021-2026)

CURRICULUM VITAE

Name : Joshua Alfred M. Manosa
Address : Purok 10, Malingao, Tubod LDN
Date of Birth : April 6, 2001
Place of Birth : Ozamiz City
Age : 25 years old
Nationality : Filipino

PERSONAL PARTICULAR

Civil Status : Single
Religion : Roman Catholic
Name of Parents : **Mother:** Jocelyn N. Manosa
: **Father:** Alfredo S. Manosa Jr.

EDUCATIONAL ATTAINMENT

Elementary : Malingao Central Elementary School
: Malingao
Junior High School : Lanao Norte National Comprehensive Highschool
: Sto. Nino Village, Baroy, Lanao del Norte
Senior High School : Lanao Norte National Comprehensive Highschool
: Sto. Nino Village, Baroy, Lanao del Norte
College : Misamis University
: F.T Ozamis City, Misamis Occidental (2021-2026)