

THESIS

**EFFECTIVENESS OF MENIRAN (*Phyllanthus niruri*
Linn) EXTRACT NANOPARTICLES ON FEED
CONSUMPTION, BODY WEIGHT GAIN
AND FEED CONVERSION RATIO OF
BROILER CHICKEN**



By

SYLVIA ANGGRAINI

SIN 06181133148

**FACULTY OF VETERINARY MEDICINE
AIRLANGGA UNIVERSITY
SURABAYA**

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BROILER CHICKEN**

Thesis
Submitted in partial fulfilment of the requirement for degree of
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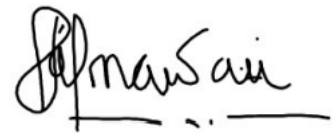
By

SYLVIA ANGGRAINI
SIN 061811133148

Approval of
Supervising Committee,



(Dr. Emy Koestanti Sabdoningrum, drh., M.Kes)
Supervisor



(Dr. Kadek Rachmawati, drh., M.Kes)
Co-Supervisor

DECLARATION

Hereby, I declare that in this thesis entitled:

**Effectiveness of Meniran (*Phyllanthus niruri* Linn) Extract
Nanoparticles on Feed Consumption, Body Weight Gain and
Feed Conversion Ratio of Broiler Chicken**

there is no other work ever published to obtain a bachelor degree in certain university and to my knowledge there is also no work or opinion ever written or published by others, except those in writing referred to this paper and mentioned in the references.

Surabaya. May 26th 2022



Sylvia Anggraini

SIN 061811133148

Has been assessed in the Research Result Seminar

Date: April 25th 2022

RESEARCH RESULT SEMINAR ASSESSMENT COMMITTEE

Chief	: Prof. Dr. Ir. Sri Hidanah, MS
Secretary	: Dr. Rochmah Kurnijasanti, drh., M.Si.
Member	: Dr. Soeharsono, drh., M.Si.
Supervisor	: Dr. Emy Koestanti Sabdoningrum, drh., M.Kes.
Co-Supervisor	: Dr. Kadek Rachmawati, drh., M.Kes.

Has been assessed in Thesis Examination

Date: May 24th 2022

THESIS ASSESSMENT COMMITTEE

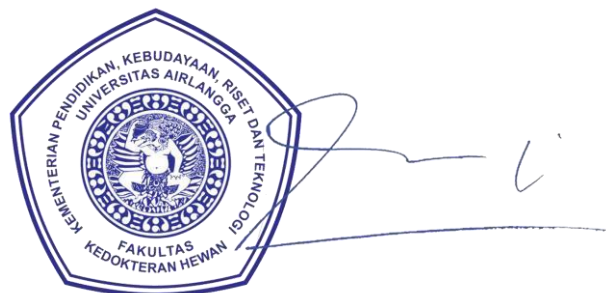
Chief : Prof. Dr. Ir. Sri Hidanah, MS
Member : Dr. Rochmah Kurnijasanti, drh., M.Si.
: Dr. Soeharsono, drh., M.Si.
: Dr. Emy Koestanti Sabdoningrum, drh., M.Kes.
: Dr. Kadek Rachmawati, drh., M.Kes.

Surabaya, May 26th 2022

Faculty of Veterinary Medicine

Universitas Airlangga

Dean,



Prof. Dr. Mirni Lamid, Drh., M.P.

NIP. 196201161992032001

SUMMARY

SYLVIA ANGGRAINI. Meniran (*Phyllanthus niruri* Linn) extract has potential as feed additive that plays role in supporting livestock productivity and health, but the absorption of plant extracts is generally not optimal due to the low solubility and bioavailability.

Nanoparticles cause an increase in surface area so the compounds are easily absorbed by cells. Good nutrient absorption leads to good feed use efficiency thereby reducing feed conversion ratio.

The purpose of this study was to determine the effect of meniran (*Phyllanthus niruri* Linn) extract nanoparticles on feed consumption, body weight gain and feed conversion ratio of broiler chicken. This research used Completely Randomized Design (CRD). A total of 400 broiler chickens were divided into 4 treatments with 10 repetitions each, each replication consisted of 10 chickens. *Cobb strain* broiler chickens reared from the age of 1 day (DOC) and at the age of 21 days were given treatment. The treatments in this research included: P0 group whom broiler chickens were not given meniran (*Phyllanthus niruri* Linn) extract nanoparticles, P1 group whom broiler chickens were given meniran (*Phyllanthus niruri* Linn) extract nanoparticles at 5% concentration, P2 group whom broiler chickens were given meniran (*Phyllanthus niruri* Linn) extract nanoparticles at 10% concentration, P3 group whom broiler chickens were given meniran (*Phyllanthus niruri* Linn) extract nanoparticles at 20% concentration. The data obtained were analyzed using ANOVA and continued with Duncan's Test.

The results showed that there were significant differences ($p < 0,05$) between treatments on feed consumption. Feed consumption of P0 was significantly different from P1, P2 and P3. P1 was significantly different from P0, P2 and P3. P2 was significantly different from P0, P1 and P3. P3 was significantly different from P0, P1, and P2. On body weight gain showed significant differences ($P < 0,05$). Body weight gain of P0 was significantly different from P1, P2 and P3. P1 was significantly different from P0, P2 and P3. P2 was significantly different from P0, P1 and P3. P3 was significantly different from P0, P1, and P2. Feed conversion ratio also showed significant differences ($p < 0,05$) between treatments. Feed conversion ratio of P0 was significantly different from P1, P2 and P3. P1 was significantly different from P0, P2 and P3. P2 was significantly different from P0, P1 and P3. P3 was significantly different from P0, P1, and P2.

Based on the text above, it can be concluded that meniran (*Phyllanthus niruri* Linn) extract nanoparticles can increase feed consumption of broiler chicken at 5% concentration and also body weight gain of broiler chicken at 5%, 10% and 20% concentrations and decrease feed conversion ratio of broiler chicken at 5%, 10% and 20% concentrations.

**Effectiveness of Meniran (*Phyllanthus niruri* Linn) Extract
Nanoparticles on Feed Consumption, Body Weight Gain and
Feed Conversion Ratio of Broiler Chicken**

Sylvia Anggraini

ABSTRACT

Meniran contains phytochemical compounds that are efficacious for productivity, but have poor solubility and bioavailability so the absorption is not optimal. Manufacture of meniran extract in form of nanoparticles allows better absorption of phytochemical compounds so the productivity of broiler chickens increases. This research was conducted to determine the effectiveness of meniran extract nanoparticles on feed consumption, body weight gain and feed conversion ratio of broiler chicken. This research was conducted using Completely Randomized Design by divided 400 broiler chickens into 4 treatments, each treatment consisted of 10 repetitions and each repetition consisted of 10 broiler chickens. The treatment groups consisted of: P0 (chickens were not given meniran extract nanoparticles), P1 (given meniran extract nanoparticles at 5% concentration), P2 (given meniran extract nanoparticles at 10% concentration) and P3 (given meniran extract nanoparticles at 20% concentration). Data in the form of feed consumption, body weight gain and feed conversion ratio were then analyzed using ANOVA and continued with Duncan's test. Data analysis showed that the administration of meniran extract nanoparticles had significant effects ($p < 0.05$). The best result on feed consumption was shown by P1, on body weight gain by P1 and on feed conversion ratio by P2. This research show that meniran extract nanoparticles can increase feed consumption at 5% concentration and also body weight gain at 5%, 10% and 20% concentrations and decrease feed conversion ratio at 5%, 10% and 20% concentrations.

Key words : meniran extract nanoparticles, feed consumption, body weight gain, feed conversion ratio, broiler chicken

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Author realizes that there are still shortcomings in this thesis, for that the author asks for criticism and suggestions for improvement in the future.

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Author

TABLE OF CONTENT

APPROVAL.....	ii
DECLARATION	iii
RESEARCH RESULT SEMINAR ASSESSMENT COMMITTEE	iv
THESIS ASSESSMENT COMMITTEE.....	v
SUMMARY	vi
ABSTRACT.....	viii
ACKNOWLEDGEMENTS	ix
TABLE OF CONTENT	xi
TABLE LIST	xiv
FIGURE LIST	xv
ATTACHMENT LIST.....	xvi
ABBREVIATION AND MEANING OF SYMBOL	xvii
CHAPTER 1 INTRODUCTION	1
1.1 Background	1
1.2 Problem Statement	4
1.3 Theoretical Foundation or Basis	4
1.4 Aim of Research.....	6
1. 4. 1 General Aim	6
1. 4. 2 Specific Aim.....	6
1.5 Benefits of Research Result	6
1. 5. 1 Theoretical Benefit.....	6
1. 5. 2 Practical Benefit	7
1.6 Hypothesis.....	7

CHAPTER II LITERATURE REVIEW.....	8
2. 1 Meniran (<i>Phyllanthus niruri</i> Linn)	8
2. 1. 1 Classification of Meniran (<i>Phyllanthus niruri</i> Linn)	8
2. 1. 2 Morphology of Meniran (<i>Phyllanthus niruri</i> Linn)	8
2. 1. 3 Compounds of Meniran (<i>Phyllanthus niruri</i> Linn).....	9
2. 2 Nanotechnology	10
2. 2. 1 Nanoparticle Synthesis.....	11
2. 2. 2 Manufacture of Nanoparticles by Ball Milling Method.....	12
2. 3 Broiler Chicken	12
2. 3. 1 Classification and Morphology of Broiler Chicken	13
2. 4 Feed Consumption.....	14
2. 5 Body Weight Gain.....	15
2. 6 Feed Conversion Ratio	15
CHAPTER III MATERIAL AND METHOD	17
3. 1 Research Design.....	17
3. 2 Sample and Sample Size	17
3. 3 Observed or Measured Variables	18
3. 3. 1 Independent Variable	18
3. 3. 2 Dependent Variable.....	18
3. 3. 3 Control Variable.....	18
3. 4 Definition of Operational Variables.....	18
3. 5 Place and Time of Research.....	19
3. 5. 1 Place of Research	19
3. 5. 2 Time of Research	20
3. 6 Material and Instrument of Research	20

3. 6. 1	Material of Research	20
3. 6. 2	Instrument of Research.....	20
3. 7	Research Procedure	20
3. 7. 1	Manufacture of Meniran (<i>Phyllanthus niruri</i> Linn) Extract Nanoparticles	20
3. 7. 2	Treatment of Meniran (<i>Phyllanthus niruri</i> Linn) Extrct Nanoparticles on Broiler Chicken.....	21
3. 7. 3	Data Collection.....	22
3. 8	Data Analysis	23
3. 9	Research Flowchart.....	24
CHAPTER 4 RESEARCH RESULT.....		25
4. 1	Feed Consumption.....	25
4. 2	Body Weight Gain.....	26
4. 3	Feed Conversion Ratio	27
CHAPTER 5 DISCUSSION		29
5. 1	Feed Consumption.....	29
5. 2	Body Weight Gain.....	30
5. 3	Feed Conversion Ratio	32
CHAPTER 6 CONCLUSION AND SUGGESTION		34
6. 1.	Conclusion.....	34
6. 2.	Suggestion	34
REFERENCES.....		36
ATTACHMENT		46

TABLE LIST

Table 4. 1 Mean and Standard Deviation of Feed Consumption (gram/head) Given Meniran (<i>Phyllanthus niruri</i> Linn) Extract Nanoparticles for Two Weeks	25
Table 4. 2 Mean and Standard Deviation of Body Weight Gain (gram/head) of Broiler Chicken Given Meniran (<i>Phyllanthus niruri</i> Linn) Extract Nanoparticles for Two Weeks	27
Table 4. 3 Mean and Standard Deviation of Feed Conversion Ratio of Broiler Chicken Given Meniran (<i>Phyllanthus niruri</i> Linn) Extract Nanoparticles for Two Weeks.....	28

FIGURE LIST

Figure 2. 1 Morphology of Meniran (<i>Phyllanthus niruri</i> Linn).....	9
Figure 2. 2 Morphology of Broiler Chicken	14
Figure 4. 1 Mean of Feed Consumption of Broiler Chicken Given Meniran (<i>Phyllanthus niruri</i> Linn) Extract Nanoparticles	26
Figure 4. 2 Mean of Body Weight Gain of Broiler Chicken Given Meniran (<i>Phyllanthus niruri</i> Linn) Extract Nanoparticles	27
Figure 4. 3 Mean of Feed Conversion Ratio of Broiler Chicken Given Meniran (<i>Phyllanthus niruri</i> Linn) Extract Nanoparticles	28

ATTACHMENT LIST

Attachment 1. Meniran Extract Concentration Calculation.....	47
Attachment 2. Nutritional Content of Basal Chicken Feed for Starter Phase BR1...	48
Attachment 3. Nutritional Content of Basal Chicken Feed for Finisher Phase BR2	49
Attachment 4. Content of Bloom and Grow Minerals	50
Attachment 5. Data on Feed Consumption, Body Weight Gain and Feed Conversion Ratio	51
Attachment 6. Test of Normality of Data Distribution of Feed Consumption, Body Weight Gain and Feed Conversion Ratio	53
Attachment 7. Statistical Analysis of the Effectiveness of Meniran Extract Nanoparticles on Feed Consumption of Broiler Chicken.....	54
Attachment 8. Statistical Analysis of the Effectiveness of Meniran Extract Nanoparticles on Body Weight Gain of Broiler Chicken.....	55
Attachment 9. Statistical Analysis of the Effectiveness of Meniran Extract Nanoparticles on Feed Conversion Ratio of Broiler Chicken	56
Attachment 10. Documentation of Activity	57

ABBREVIATION AND MEANING OF SYMBOL

cm	= centimeter
CRD	= Completely Randomized Design
EMA	= European Medicines Agency
<i>et al.</i>	= et alia
FCR	= Feed Conversion Ratio
g	= gram
iu	= international unit
Kcal	= Kilocalories
Kg	= Kilogram
mcg	= microgram
M.E	= metabolism energy
mg	= milligram
ml	= milliliter
nm	= Nanometer
ppb	= <i>part per billion</i>