

**DETERMINATION OF THE LETHAL DOSE CONCENTRATION (LD50) OF
STANDARDIZED ROSEMARY (*Rosmarinus officinalis*) ESSENTIAL OIL
AMONG THE PHILIPPINE NATIVE CHICKENS**

A Special topic

Presented to

The College of Agriculture, Resources, and Environmental Sciences

Central Philippine University

Jaro, Iloilo City

In Partial Fulfillment

of the Requirements for the Degree of

BACHELOR OF SCIENCE IN AGRICULTURE



By:

MC ROLAN T. BALURAN

April 2024

**DETERMINATION OF THE LETHAL DOSE CONCENTRATION (LD50) OF
STANDARDIZED ROSEMARY (*Rosmarinus officinalis*) ESSENTIAL
OIL AMONG THE PHILIPPINE NATIVE CHICKENS**

Mc Rolan T. Baluran

ABSTRACT

This study was conducted at the Central Philippine University, College of Agriculture, Resources, and Environmental Sciences at the Research and Developmental Learning Building. The study began on November 2023 and ended on January 2024. The study was conducted to determine the lethal dosage concentration (LD50) of standardized Rosemary (*Rosmarinus officinalis*) essential oil among the Philippine native chickens. The research involved analyzing the efficacy of Rosemary essential oil against *Pseudomonas aeruginosa*. Additionally, a toxicity assessment was conducted on the essential oil, focusing on high dosage effects on Philippine Native Chickens. Four three-month-old native chickens were used in the study. The liveweight gain after treatment was observed to be higher than before, indicating positive effects. No signs of toxicity were observed in the chickens, and all remained alive and active, demonstrating a favorable survival rate. Fecalysis results indicated the deworming effectiveness of rosemary essential oil in eradicating parasitic eggs. Overall, the findings suggest promising results for the antibacterial properties of rosemary essential oil and its potential benefits for native chicken health.

REFERENCES

- Canada.ca. (2018). Chemicals and Materials.
<https://www.ccohs.ca/oshanswers/chemicals/ld50.html>
- Erkan I.E., Aras O.(2020). Studies on Antimicrobial, Antifungal and Antioxidant Properties of Rosemary.
https://www.researchgate.net/publication/347935431_Studies_on_Antimicrobial_Antifungal_and_Antioxidant_Properties_of_Rosemary_A_Review
- Fotea L., Costachescu E., Hoha G. (2012). THE EFFECT OF ESSENTIAL OIL OF ROSEMARY (*ROSMARINUS OFFICINALIS*) ON TO THE BROILERS GROWING PERFORMANCE.
https://www.uaiasi.ro/firaa/Pdf/Pdf_Vol_52/Lenuta_Fotea1.pdf?fbclid=IwAR3kuyNlpK7zF9_nWePhrkE5u0q_DimGcj5nWkrNv82HuQ_56UvxEptUVjY
- Gheisar M.M., Kim I.H. (2016). Phytobiotics in poultry and swine nutrition.
<https://www.tandfonline.com/doi/full/10.1080/1828051X.2017.1350120>
- Lahlou R., Bounechada M., Mohammedi A., Silva L., Alves G. (2021). Dietary use of *Rosmarinus officinalis* and *Thymus vulgaris* as anticoccidial alternatives in poultry.
<https://www.sciencedirect.com/science/article/abs/pii/S0377840121000122?fbclid=IwAR04BqSR2yuF4Uad2As2YpOc-ysWagXQhictXL3QLYgOnJGf221HKb6Zgs8>
- Lopez R.V., Lambio A.L., Vega R.S., De Guia A.P. (2014). MANAGEMENT PRACTICES OF NATIVE CHICKEN (*Gallus gallus domesticus* Linn.) PRODUCTION IN PALAWAN, PHILIPPINES.
<https://www.cabidigitallibrary.org/doi/pdf/10.5555/20173178936>
- Lugman, S., Dwivedi, G., Darokar M., Kaira, A., Khanuja, S.(2014). POTENTIAL OF ROSEMARY OIL TO BE USED IN DRUG-RESISTANT INFECTIONS.Original

Research, <https://researchgate.net/profile/Dr-Gaurav->

[Dwivedi/publication/5944794_Potential_of_Rosemary_oil_to_be_used_in_drug-resistant_infections/links/0deec515d0936e5e0a000000/Potential-of-Rosemary-oil-to-be-used-in-drug-resistant-infections.pdf](https://researchgate.net/profile/Dr-Gaurav-Dwivedi/publication/5944794_Potential_of_Rosemary_oil_to_be_used_in_drug-resistant_infections/links/0deec515d0936e5e0a000000/Potential-of-Rosemary-oil-to-be-used-in-drug-resistant-infections.pdf)

Ojeda-Sana, A., Van Baren, C., Elechosa, M., Juarez, A., Moreno, S.,(2013). New insights into antibacterial and antioxidant activities of rosemary essential oils and their main components. Sciencedirect,

<https://www.sciencedirect.com/science/article/abs/pii/S0956713512005221>

Ozaraga, B., Ozaraga M., & Barrios M. (2015). Ethnobotanical Dewormer Composition for Free Range Native Chickens.

<https://mjst.ustp.edu.ph/index.php/mjst/article/view/54>

Polat U., Yesilbag D., Eren M. (2008). Serum Biochemical Profile of Broiler Chickens Fed Diets Containing Rosemary and Rosemary Volatile Oil.

[https://dergipark.org.tr/en/download/article-](https://dergipark.org.tr/en/download/article-file/497747?fbclid=IwAR0STheZ3t8o8EULaBKCJgyH7lxZ_g85VWdqj95VZWrXd)

[file/497747?fbclid=IwAR0STheZ3t8o8EULaBKCJgyH7lxZ_g85VWdqj95VZWrXdyCpCwt6BjQBA2o](https://dergipark.org.tr/en/download/article-file/497747?fbclid=IwAR0STheZ3t8o8EULaBKCJgyH7lxZ_g85VWdqj95VZWrXdyCpCwt6BjQBA2o)

Soylu B., Ozpinar H., Ozpinar N. (2023). Investigation of the chemical composition, antioxidant, and antiparasitic effects of *rosmarinus officinalis* l.

[https://books.google.com.ph/books?hl=en&lr=&id=MJnrEAAAQBAJ&oi=fnd&pg=](https://books.google.com.ph/books?hl=en&lr=&id=MJnrEAAAQBAJ&oi=fnd&pg=PA133&dq=rosemary%20anti%20parasite&ots=FZkoMTjBBV&sig=4SnW805RD)

[PA133&dq=rosemary%20anti%20parasite&ots=FZkoMTjBBV&sig=4SnW805RD](https://books.google.com.ph/books?hl=en&lr=&id=MJnrEAAAQBAJ&oi=fnd&pg=PA133&dq=rosemary%20anti%20parasite&ots=FZkoMTjBBV&sig=4SnW805RD)

[qKif3rBWv_A4PUhayM&redir_esc=y&fbclid=IwAR0tm9KveMDOhtVDQIBbCHES](https://books.google.com.ph/books?hl=en&lr=&id=MJnrEAAAQBAJ&oi=fnd&pg=PA133&dq=rosemary%20anti%20parasite&ots=FZkoMTjBBV&sig=4SnW805RD)

[4XtCyu9NRjVlpRtcWJ-xdQJc1h4tBmXJobk#v=onepage&q&f=false](https://books.google.com.ph/books?hl=en&lr=&id=MJnrEAAAQBAJ&oi=fnd&pg=PA133&dq=rosemary%20anti%20parasite&ots=FZkoMTjBBV&sig=4SnW805RD)

Ybañez, R.H., Resuelo K. J., Kintanar, A. P., & Ybañez, A. (2018). Detection of gastrointestinal parasites in small-scale poultry layer farms in Leyte, Philippines, *Veterinary World*, 11(11): 1587-1591.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6303491/>