

**MODIFIED RABBITRY STRUCTURE EQUIPPED WITH MICRO-CLIMATIC
MONITORING AND AUTOMATED MISTING SYSTEM**

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ABSTRACT

CALUYA, XAVIER Y D.R. and **DE LEON, RESTY V.**, Department of Agricultural and Biosystems Engineering, College of Engineering, Central Luzon State University, Science City of Muñoz, Nueva Ecija, Philippines, **July 2023**, **MODIFICATION OF RABBITRY STRUCTURE EQUIPPED WITH MICRO-CLIMATIC MONITORING AND AUTOMATED MISTING SYSTEM**

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This study aimed to enhance existing rabbitry structures by implementing a micro-climatic monitoring and misting system. The effectiveness of the modified structure and monitoring system was evaluated by assessing the rabbits' body weight gain and feed conversion ratio. Twelve New Zealand White rabbits, aged 35 days, were selected as subjects, with six housed in the modified structure with the misting system and the other six placed in bamboo cages. Both types of housing were equipped with micro-climatic sensors to measure temperature, relative humidity, and ammonia levels. Data was collected and analyzed over a nine-week period.

Results showed that rabbits in the modified structure exhibited an average body weight gain of 1285 grams, while those in the bamboo cages averaged 1042.5 grams. The feed conversion ratio was 3.61 in the modified structure, compared to 4.49 in the bamboo cages. The modified rabbitry structure demonstrated a 23% higher body weight gain and a 24% better feed conversion ratio than the bamboo cages. Additionally, the modified structure maintained a temperature difference of 1 to 3 degrees Celsius compared to the bamboo cages, with relative humidity ranging from 70% to 82% in the modified structure and 50% to 75% in the bamboo cages. Ammonia levels peaked at 4.2 ppm in the modified structure and 8.2 ppm in the bamboo cages.

These findings highlight the positive impact of the modified rabbitry structure with the micro-climatic monitoring and misting system on rabbit performance. The rabbits exhibited improved body weight gain and feed conversion ratio, indicating enhanced growth and resource utilization. The controlled temperature and humidity levels in the modified structure provided a more favorable environment for the rabbits' well-being, while lower ammonia levels suggested improved waste management.

Keywords: Microclimatic monitoring; misting system; body weight gain; feed conversion ratio

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