

BALINGIT, ALYSTER M., and BAUTISTA, KRISTEL ANNE R.,
Department of Agricultural and Biosystems Engineering, Tarlac Agricultural
University, Malacampa, Camiling, Tarlac, May 2022, **EXTRACTION OF ROTTEN
BANANA WASTE AS POTENTIAL SOURCE FOR BIOETHANOL.**

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Most nations are facing two major challenges, energy crisis, and proper waste disposal. Living in one of the countries which export a huge volume of bananas can be a challenge because bananas spoil in 2-3 days. On the other hand, there is a high demand for bioethanol. Spoiled bananas are already considered waste. To address this, it is better if bioethanol is made from low-cost raw materials. With aim of minimizing waste from bananas and contributing to energy conservation, the researchers determined if extracted rotten banana waste is a potential source of bioethanol.

The factor used were the varieties of banana (Lakatan, Latundan, and Saba) and days of fermentation (3 days, 6 days, and 9 days). Each treatment was replicated three times. All the data gathered were tabulated and statistically analyzed using Analysis of Variance of the Two-Factorial Completely Randomized Design and treatments were compared using the Duncan's Multiple Range Test (DMRT).

The highest yield of bioethanol production was observed in 3 days of fermentation of Lakatan with 136 mL. However, the best combination of high-quality bioethanol is the 6 days fermentation of Lakatan because it has the highest alcohol content of 41.33% and the longest time of flame observed for 19.80 s. The return on investment in the extraction of rotten bananas to make bioethanol is 41.6%.

PEDRO, Daniel Paulo A. and Annalie B. Paragas. 2021. **Growth Performance and Immune Response of Free-Range Chickens Supplemented with Fermented Soybean (*Glycine max*) Curd Residue**

This study was conducted to identify the effect of supplementing soybean curd residue (SCR) in the growth performance and immune response of free-range chickens. It specifically aimed to determine the efficacy of soybean curd residue (SCR) as an alternative feed source for growing free-range growers in the locality, determine the soybean curd residue on the antibody titer against Newcastle Disease of free-range growers; and determine the cost analysis of supplementing soybean curd residue for rearing free-range growers. A total of 150 grower Hubbard chickens, regardless of gender were randomly distributed into five (5) treatments and were replicated three (3) times. Treatment 1 was given pure commercial grower feeds (control); treatment 2 was given commercial grower feeds with 5% SCR; Treatment 3 was given commercial grower feeds with 10% SCR; Treatment 4 was given commercial grower feeds plus 15% SCR; and Treatment 5 was given commercial grower feeds with 20% SCR. Of all the treatments, Treatment 2 showed promising results having the highest final weight, gain in weight, and average daily gain, and the lowest feed conversion ratio. Though feeding did not significantly affect the antibody titer, an increase in its value was noted. The cost analysis showed that the increasing amount of SCR causes a decrease in the cost of production. Hence, Treatment 2 is better than the other treatments based on the growth performance parameters. Also, feeding does not significantly affect antibody titer. While inclusion of SCR in feeding growers is relatively cheaper than using pure commercial grower feeds.