

ABSTRACT

Name of Institution: De La Salle University – Dasmariñas

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Title: A Study on the Effectivity of Locally Produced Vitamin B₁₂ on the Growth Rate of Rats

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Objectives of the Study:

A. General: The study was done to determine the effects of the locally produced vitamin B₁₂ on the growth rate of rats.

B. Specific: The study aimed to know the significant differences on the weight of rats in terms of their weight using the different concentrations of locally produced vitamin B₁₂.

Scope and Coverage:

The study was conducted in BIOTECH in UP Los Baños for two months and at Del Moral's residence for another three weeks.

This study was directed on the use of the different concentrations of locally produced vitamin B₁₂ from coconut water. These concentrations consisted of: 100µg, 200µg, 300µg, 400µg and 500µg. Two controls were added consisting of

the commercial feed and the feed without the concentration of the locally produced vitamin B₁₂.

The rats' daily gain in weight were measured and compared with their daily food consumption.

Methodology:

This study used 21 rat models, which were divided into seven groups supplemented with different concentrations of locally produced vitamin B₁₂. Each concentration (100µg, 200µg, 300µg, 400µg, 500µg) were added to each kilogram of the animal feed. Three of the remaining six rats, served as a control group wherein locally produced vitamin B₁₂ was not supplemented in their feed while the other three were supplemented with a commercial feed. These animals were weighed daily to determine their weight gain. The animal feed was prepared with a definite formulation obtained from Food and Feeds Laboratory of BIOTECH at UP Los Baños.

Findings:

After 21 days of test feeding the rats, it was found that the rats grew significantly specially in group no. 2 (200µg) which had an increase of 5.03g, in group no. 5 (500µg) which had an increase of 5.70g, in group no. 6 (without vitamin B₁₂) which had an increase of 5.66g and also in group no.7 (commercial feed) which had an increase of 8.6g.

ANOVA results showed that there were significant differences on the effect of the different concentrations of locally produced vitamin B₁₂ on the growth rate of rats in terms of their weight as P value (0.001) was lesser than $\alpha = 0.01$. This was established by concentration nos. 5 (500 μ g) and 3 (300 μ g) which had the highest and lowest concentrations, respectively.

Conclusion:

Based on the given data, it was found that the rats grew but not significantly compared with that of the commercial feed. In contrast, the amount of gained weight in group no. 5 was closely related to the commercial feed, which means that for a lesser amount of money, it can be observed that growth rate of rats was the same. It was also found that when group no. 5 was compared to the other groups, there was little amount of difference in terms of their weight. One probable reason was that the body only needs a specific amount of vitamin in its daily metabolism and the excess is excreted in their urine.

In conclusion, the locally produced vitamin B₁₂ in an appropriate concentration can replace the vitamin B₁₂ coming from other countries, and can be added to the commercial feed instead of the imported vitamin B₁₂ in a lesser amount of money.

Recommendations:

Based on the results of the study the following courses of action are recommended :

1. The scope and the delimitation of the study should be extended to cover other kinds of factors like the size of its body and its organs in determining the effects of locally produced vitamin B₁₂.
2. Trials must be multiplied and subgroups must be added to the study to further distinguish the differences of vitamin B₁₂ effects.
3. Further studies must use other animal models like fish and or chicken to determine the effects of the locally produced vitamin B₁₂ on them .
4. Further studies must observe and apply the utmost care in handling, transporting and storing of the vitamin B₁₂ so that the probability of producing the pseudo- vitamin will be lessened .