De La Salle University - Dasmariñas
GRADUATE PROGRAM

Effects of *Spirulina platensis* Turpin as Fish Feed Supplement on the Growth Rate, Histological Characteristics and Protein Content of *Chanos chanos* Forsskal (Milkfish)

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Master of Science in Biology

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ABSTRACT

Name of Institution : De La Salle University-Dasmariñas

Address : Bagong Bayan, Dasmariñas, Cavite

TITLE : Effects of *Spirulina platensis* Turpin as Fish Feed Supplement on the Growth Rate, Histological Characteristics and Protein Content of *Chanos chanos* Forsskal (Milkfish)

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OBJECTIVES OF THE STUDY:

A. GENERAL:

The study generally aimed to determine the effects of *S. platensis* as fish feed supplement on the growth rate and histological characteristics of *C. chanos* (milkfish).

B. SPECIFIC:

Specifically, the study aimed to determine the effect of *S. platensis* on *C. chanos* (milkfish) in terms of the following parameters:

1. increase in body length
2. gain in body weight
3. structure of skeletal muscle
4. protein content of the meat

METHODOLOGY:

This experimental study employed the Complete Block Research Design, with four treatments: T_0 = 100% commercial fish feed, T_1 = with 10% *S. platensis* supplementation, T_2 = with 20% supplementation, and T_3 = with 30% supplementation. The test fish was milkfish. The study used experimental methods in order to determine the effects of *S. platensis* supplementation on the growth rate of milkfish.

MAJOR FINDINGS:

Generally, growth, in terms of body length and weight, structure of skeletal muscle tissue, and protein content, was highest in T_3

receiving 30% *S. platensis* supplementation followed by T_2, T_1 and lowest in the control treatment (T_0). Thus, the highest growth, which occurred in T_3, could be attributed to the higher amount of protein in the diet contained in the *S. platensis* supplementation. This indicates that the average growth of the test fishes in T_2 and T_1 could also be due to the supplementation of their diet. On the contrary, the low increase in length and low gain in weight as well the low protein content of the test fishes in the control treatment could have been due to the absence of *S. platensis* supplementation.

CONCLUSION:

S. platensis supplementation has significant effects on the growth rate of milkfish based on its body length and weight and structure of skeletal muscle tissue and protein content of the meat of milkfish.

This observation agrees with the general principle that an increase in protein content of diet improves the growth of animals, as this will enable animals to meet their protein requirement (Yamada, 1987). This only proved that the protein profile of *S. platensis* was utilized by the milkfish.

RECOMMENDATIONS:

The researcher hereby recommends the following:

1. Similar study with longer period of administration of the experimental diet until the test fishes reach marketable size;
2. Similar study with higher *S. platensis* supplementation involving some additional parameters, such as carbohydrates and fats content of the meat;
3. Physical examination of other structures of the test fishes, such as the color, odor and taste, be included in the study;
4. A study be conducted on *S. platensis* supplementation on other test fishes such as shrimps, poultry, and livestock;
5. A study be conducted on how to culture *S. platensis* directly on the fish pond with the subject organisms;
6. A study be conducted on supplementation of *S. platensis* combined with other feed supplement of animal origin;
7. A similar study on actual field setting.
8. A similar study that will characterize what specific proteins are present on the meat of the test fishes.