

**EFFECT OF RAW *Spirulina platensis* SUPPLEMENT ON
THE COLOUR ENHANCEMENT AND GROWTH
PERFORMANCE OF GUPPY FISH – RED BLONDE
(*Poecilia reticulata*)**

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ABSTRACT

Aquarium fish industry in Sri Lanka has become a valuable source of foreign exchange recently. Guppy fish (*Poecilia reticulata*) ranks the highest (67%) market in Sri Lankan fresh water ornamental exports. *Spirulina platensis* is one of commercially important micro algae due to its overall nutritional qualities. The study investigated the effect of dietary supplementation of different percentages of raw *Spirulina platensis* (5%, 10%, 15%, 20%, and 25%) (*Spirulina platensis* percentages measured based on wet weight) on growth performance, feed conversion rate and survival rate in guppy and were compared with commercial feed as the control treatment. *Spirulina platensis* were cultured in an axenic batch culture method in Zarrouck's medium, under illumination with a photo period of 12 hours light and dark. Glass tanks (0.3 m × 0.15 m × 0.15 m) were used for each treatment with 3 replicates and 21 days old red blond guppy were reared with a stocking density of 10 fish/tank. Fish were fed, twice per day at a rate of 10% of body weight for 60 days. Data were collected every 2 weeks interval and analyzed by one way Analysis Variance (ANOVA). At the end of the experiment, there were significant differences between all the diets in terms of average body weights ($p < 0.05$). The highest recorded in 5% raw *Spirulina platensis* incorporated feed (0.45 ± 0.09 g) and lowest in the control treatment (0.36 ± 0.13 g). No significant differences were observed in weight gain and specific growth rate ($p > 0.05$). However, there were significant differences in feed conversion rate between all the diets ($p < 0.05$) and the highest recorded in 5% raw *Spirulina platensis* incorporated feed (1.43 ± 0.06) and the lowest in control treatment (2.05 ± 0.09). Best colour performance was observed with 25% raw *Spirulina platensis* incorporate diet, but almost similar colour enhancements was observed in each raw *Spirulina* incorporated diets. Therefore, this study can conclude that that 5% raw *Spirulina platensis* supplementation has a positive effect on the growth and the feed conversion rates in guppy fish and that percentage of raw *Spirulina platensis* can use for colour enhancement of guppy fish with less amount of raw *Spirulina platensis*.

Keywords: *Poecilia reticulata*, *Spirulina platensis*, Growth performance, Dietary supplementation, Colour enhancement