Growth Performance of Rohu and Mrigal Fed on Vegetable Waste-Incorporated *Spirulina* Feed

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Abstract

This study was conducted from March 2022 to September 2022 to investigate the potential of incorporating vegetable waste in Spirulina-based feed as an alternative, sustainable aquafeed for Indian Major Carps (IMC), specifically Rohu (Labeo rohita) and Mrigal (Cirrhinus mrigala). The increasing demand for fishmeal in aquaculture had led to a search for cost-effective and sustainable feed alternatives. Vegetable waste, being a readily available and low-cost resource, was combined with Spirulina powder to formulate a nutritionally balanced feed that can support the growth and health of IMC.

The experimental study involved feeding the test species for over 6 months with a 50 % vegetable-waste-incorporated Spirulina feed, measuring growth parameters such as specific growth rate (SGR%), average daily gain (ADG), and feed conversion ratios (FCR). Results indicated significant improvements in growth performance, as the SGR percentage was higher (0.467%) in experimental fish compared to those fed commercial (0.274%) and control (0.33%) feed, with the lowest FCR.

This research underscores the potential of vegetable waste as an alternative aquaculture feed ingredient, contributing to sustainable fish farming practices and offering a promising solution to both waste management and feed security. The study also highlights the effectiveness of Spirulina in enhancing the nutritional profile of the diet, supporting the overall well-being of IMC species in aquaculture systems.

Keywords

Growth performance, Indian Major Carps, Spirulina, Vegetable waste.