

A preliminary study on the preparation method of soya milk feed and its effect on the survival rate of common carp (*Cyprinus carpio*) post-larvae

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Common carp plays a major role in inland fish production. However, seed supply for culture-based fisheries remains inadequate due to the low survival rate during their nursery stages. During their first week of nursery stage, they were fed with soya milk. Normally, soya comprises over 30% crude protein, but unfortunately, soya contains few anti-nutritive factors such as trypsin and amylase inhibitors. There are many practices developed for deactivating those inhibitors, including applying and overnight soaking in hot water, frying seed powder, and overnight soaking in water. The study was conducted using a completely randomized block design with in four cement tanks each measuring 18m² and 1.2 m deep over a period of 15 days. The post- larvae stocking density was 2777 post larvae/m² (50000/18m²). Soya milk was administered as feed at a total volume of 0.5 liters, distributed over three times per day. The post larvae were fed with soya milk prepared according to the above three methods, while soya milk prepared using normal powdered soya was taken as a control treatment. Body weight and total length of post-larvae were recorded at stocking (Initial mean length (5.68 mm), Initial mean weight (4.25 mg)) and water quality parameters were also recorded twice a day in each treatment. The survival rate, body weight and total lengths of the post-larvae were recorded at the end of the 15 days of rearing period. The data were analyzed using a one-way ANOVA followed by Turkey's test at the 5% significance level. Soya milk prepared by using hot water (P = 0.001) showed a significant difference, while other methods showed no significant difference between each other. A significantly high survival rate of 87% was observed with the hot water soaking method compared to the control. In contrast, frying seed powder and the overnight water soaking method demonstrated lower survival rates of 43% and 35%, respectively, when compared to the control. Soya beans contain anti nutritional factors such as inhibitors and lectins, which can interfere with digestion and nutrient absorption. Therefore, the present study revealed that soaking in hot water helps to deactivate these compounds, making the soya milk more suitable and safe for the post larvae.

Keywords: Anti-nutritive factors, Common carp, Soya milk, Survival rate