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## Enrichment of artificial feed with carotenoid sources spirulina and carrot powder additives on the growth, pigmentation and maturation in captive-reared indigenous fish *Puntius sophore* (pool barb) in M.P, India

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Aquaculture is playing important role in the production of quality protein for mankind. Indian ornamental fishes on the other hand support major trade both in domestic and international market. Small indigenous species of fish play a vital role in providing nutrition to the rural poor livelihood and food security. Feed is influencing the growth, survival, pigmentation and maturation in fishes. In views of poverty alleviation and employment generation as well as to explore the importance of indigenous fishes and for commercial purpose, an attempt has been made to develop formulated feed from cheap, locally available carotenoid materials (spirulina and carrot) useful in formulating healthy feeds that can provide quick growth, maturation and coloration in fishes. Therefore the experiments are carried out with three replicates of the indigenous fish- *Puntius sophore* for the periods of four months. The standard culture method has been adopted and physico-chemical factors of water also have provided at optimal conditions, for each group. Experimental diets containing 4%, 6%, 8% and 10% spirulina and carrot powder added diets along with a carotenoid free basic carp feed is utilized as a control diet. In all fish genera feeding with spirulina showed a significant higher fecundity and growth as compared to control and carrot diet ( $p < 0.01$ ). The mean GSI value in male and female were 1.02% and 11.23% recorded in the fishes fed on the control diet as compare to this feed 10% spirulina (SP) added feeds has recorded maximum Gonado Somatic Index (GSI) value 1.23% and 12.52% in male and female. By the estimation of fecundity the highest number of eggs (1401) has recorded in the fishes fed on the diet with 10% SP diet, while the lowest (989) has recorded in the fishes fed on the control diet but 8% carrot powder added diet shows the highest total carotenoid contents 5.98 mg/kg in male and 5.49 mg/kg in female fishes. Thus results indicate that carotenoid added formulated diets in fishes can provide desired pigmentation and growth performances and improve their potentials to put forward them as ornamentally sustainable value for commercial trade.

### Biography

Alka Parashar is a Ph.D. (Environmental Impact Assessment), M.Phil (Futurology) faculty of Engineering Science, D.A.V.V. Indore and M.Sc. Zoology (Fishes), H.S. Gour University Sagar, with expertise in the research fields of Simulation Modeling and Ecological Modeling for planning management and sustainable development. She is currently a Professor and Head of the Department Zoology and Administrant Officer, Sarojini Naidu P.G. (Autonomous) College, Bhopal, Madhya Pradesh, India. She has successfully served as ambassador professor, Dean N.S.S. officer, Examiner and Convener with reputed colleges and universities of India.

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