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Colour preferences of juvenile turbot (*Scophthalmus maximus*)

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The background colour of aquaculture tanks was ordinarily chosen according to practical experience and/or observations of the fish behaviour and growth rates achieved. However, some farmed species, such as fish, are sentient and can make choice, showing preferences to environments. In the current study, a self-referent colour preference device was developed and the self-referent colour preference of farmed fish investigated. In experiment one, the background colour preference of juvenile turbot cultured under a grey background for >3 months post-incubation was evaluated. Based on these results, in experiment two, juvenile turbot were adapted to blue, pink, white and black backgrounds for 50 days and their preferences were established. Meanwhile the growth rates, feed intake and the metabolic rates (including oxygen consumption rate and ammonia excretion rate) were evaluated. We found that turbot farmed under a grey background, or after long-term white, blue, pink and black colour adaptation, always displayed a preference for a white background and a dislike for black, red, or brown backgrounds, although their body colour was greyish. Long-term adaptation influenced the frequency of juveniles selecting white, black, pink or blue backgrounds. They showed the highest growth rate, feed intake and the metabolic rates under the blue and white colours, and the lowest under the black colour in accordance with their preferences. While how turbot made their decisions on self-referent colour preferences in a short time needs more investigations. These results indicate that dark colour is not suitable for turbot culture in view of the fish welfare.

Biography

Xian Li has completed her PhD from Institute of Oceanology, Chinese Academy of Sciences. She has published more than 16 papers in reputed journals.

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