Colour vision in the tropical giant mottled eel Anguilla marmorata as determined by classical conditioning test

ABSTRACT

The giant mottled eel Anguilla marmorata Quoy & Gaimard is an important aquaculture candidate in eel farming industry. The high economic value of the species leads to intensive cultivation affecting its welfare under farm condition. Since colour environment affects the welfare of confined fishes, basic information on colour vision is necessary. By means of a behavioural experiment of A. marmorata elvers in the laboratory, we determined colour vision under natural daylight. The elvers were subjected to classical conditioning to associate a reward feed with a blue or a green stimulus placed amid seven shades of grey. The elvers learned this visual task after 30 or 36 trials and thus the ability of colour discrimination was confirmed. Since the elvers have the retinal tapetum, it may be suggested that colour vision in dim light enables crepuscular feeding by the A. marmorata elvers, clearly an advantage in aquaculture.