

BEHAVIOUR OF JUVENILE CEPHALOPODS: PREFERENCE FOR TEXTURE AND BRIGHTNESS OF SUBSTRATA

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ABSTRACT

Behavioural preference for different types and levels of brightness of substrata was studied in cultured, juvenile sepiid cuttlefish, *Sepia pharaonis* and *Sepiella inermis*. Sand, muddy sand and mud represented types of benthic substratum. Both species of cuttlefish preferred sand to mud in long term studies (24 hrs). White, grey and black plastic plates were used as substrata representing high, medium and low levels of brightness. The cuttlefish preferred medium level of brightness during the early phase (up to 3 hrs) of the experiment. The degree of preference for substratum was higher in *Sepia*, living in the open sea, compared to the estuarine *Sepiella*. Cuttlefish selected substrata in relation to benefits, which we suggest are facilitated respiration, cypsis, and energy conservation. Cultured bigfin squid, *Sepioteuthis lessoniana*, was studied as an outgroup on preference for brightness of substrata. The bigfin squid preferred medium level of brightness during the first 6 hrs and then gradually changed to prefer low level of brightness at night. We suggest that preference for brightness is associated with visual discrimination of depth in the pelagic squid performing innate diurnal migration to greater depth. The present results should be applied to painting cephalopod culture tanks in order to reduce stress, promote growth and enhance the contrast of feed.