Phuket mar. biol. Cent. Res. Bull. **66:** 221–227 (2005)

CHEMICAL STIMULI AND FEEDING BEHAVIOR IN OCTOPUS, *OCTOPUS VULGARIS*

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ABSTRACT: The effects of chemical stimuli in the feeding behavior of *Octopus vulgaris* were studied using bait pellets, to elucidate the effect of bait quality on feeding behavior, to observe the chemoreceptive function of the arms and lip, and to see if they play a role in bait quality selection. The pellets were made from a binder (starch and cellulose) and 14 types of solutions: amino acids (L-Ala, L-Pro, L-Met, L-Ser, Gly or Bet), sugars (Glucose, Galactose or Sucrose), Quinine-HCl, fish extract (blue sprat, *Spratelloides gracilis*), and cephalopod inks [same species, same genus (*Octopus aegina*) or different order (*Sepioteuthis lessoniana*)]. Subjects differed in behaviors depending on test bait's contents. The behavioral differences occurred when individuals touched the bait with arm(s) or lip. The ink from a different order induced a significantly higher rate of rejection, compared with the control bait when touched by the arm(s). Comparisons of ingested ratios for each type of bait indicated that fish extract resulted in significantly higher ingestion, and the group containing Met, Gly, galactose and ink from same genus in lower ingestion rates. It was found that chemoreception in the arms and lip is responsible for the feeding behavior in terms of bait quality selection. It is also suggested that the properties of chemoreceptors on the arms and lip might be different.