

— Modification of the feeding behaviour of sole (



In aquaculture, a diet both nutritionally sound and organoleptically pleasing is essential to guarantee satisfactory intake. This has not been fully achieved with soleids (*Solea solea* and *Solea senegalensis*) because of their special palatability requirements, which are difficult to satisfy with conventional diets. Nevertheless, soleids have long been considered interesting species for aquaculture. To improve the palatability of diets for this family, various substances have been tried. Betaine has been the most effective substance by far, for all the species studied and especially for sole, reporting good results but at too high a cost. In other areas of animal production, the problems of palatability are solved with commercial flavours, which offer scope for specialisation to satisfy the most demanding organoleptic requirements. The aim of the present work is to evaluate the use of a bivalve commercial flavour as an alternative to betaine in sole diets. An ethological methodology, adapted to the feeding behaviour of sole, is developed to qualify and quantify behavioural changes when faced with experimental diets containing either this commercial flavour or betaine. Results show that the

commercial flavour externally applied to feed particles performs efficiently as an attractant and as an arrestant, being able to attract the animal to the food source from some distance, provoke the ceasing of locomotion close to the food particle and promote initiation of feeding. In this step of the feeding sequence, it may be considered a viable alternative to betaine from the organoleptic point of view and economic cost. When the commercial flavour is applied internally to the feed, its performance as a stimulant, to encourage the continuation of feeding, is not distinguishable from betaine. Other factors such as time of feeding and size of fish, also assessed in the experiment, boldly influenced the level of acceptance of diets, even more than the composition of the diet itself. The distribution of feed at a time out of the endogenous rhythm of the species provoked a lower feed acceptance. Slight differences in the size of fish also affected the degree of acceptance, this being lower in the smaller fish.

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