

Can sardine cooking waters extract modulate European seabass feed intake?

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The goal of this work was to evaluate three extracts from sardine cooking waters, a by-product of the canning industry, as feed intake modulators, when included in highly vegetable diets, which often display low intake by carnivorous species.

Sardine cooking waters, supplemented with acorn extract (Aroma 3) were processed, by vacuum condensation (Aroma 1) or liquid/liquid extraction with soybean oil (Aroma 2). Aromas were then included in a low-fishmeal diet (12.5%), achieving equal amounts of 1-penten-3-ol (2 µg/g). Diets were assigned to triplicate groups of 15 European seabasses (initial weight 95.7 ± 13.5 g) fed twice daily until apparent satiation in a recirculating saltwater system. Growth, nutrient utilization and whole-body composition were assessed after 18 weeks, along with both instrumental texture and color measurements and a sensory analysis of fillets. In parallel, a short-term trial was performed, in which fish fed the experimental diets were sampled 2 or 6 hours after the first feeding, for evaluation of neuropeptides involved in intake regulation.

No significant differences among diets were found in fish final weight, specific growth rate, whole-body composition, and nutrient gain. Diet with Aroma 2 displayed a significantly higher voluntary feed intake than the Aroma 3, although both remained similar to the non-supplemented control. No differences on organoleptic properties were found by the panelists in the sensory analysis. No differences were found on neuropeptides expression 2h after feeding, but expression of orexigenic *agr2* was increased 6h post-feeding in all supplemented diets, in the telencephalon. Overall, results suggest that the aromas can modulate feed intake, but further optimization of incorporation levels should be performed as to see a clear effect on fish growth.

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