"Social knockout effect" on group feeding dynamic in juvenile sea bass (Dicentrarchus labrax)

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Introduction

In self-feeding conditions, groups of juvenile sea bass display inter-individual differences in the feeder actuation. Some fish, the high-triggering fish (H-T), display a strong actuation of the feeder, i.e., a high food-demand activity, and are responsible for the food distribution for their groups.

What is the impact of a social knockout (K.O.) on the removal of the H-T individuals, on the group dynamic?

Results & Discussion

- New H-T fish learn faster to actuate the trigger: 5 days vs 14 days in mean (t-test, \( t = 4.87, p = 0.008 \))
- The total number of trigger actuation = the total quantity of food delivered by the new H-T fish is similar before and after the K.O.

Conclusions

The knockout doesn’t disturb neither the feeding dynamic nor the social interactions. The results show an individual plasticity in the high-triggering status suggesting that the function of high food-demand fish is essential for the group stability, not the individuals themselves. In add, the high-triggering fish are able to estimate and to satisfy the global food needs of their congeners: the information are transferred via a communication network.