

# Personality tests for fish could boost reproduction rates

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Aquaculture experts from the University of Stirling and the Institute for Food and Agricultural Research and Technology (IRTA) in Catalonia, have found the way fish, Senegalese sole, cope with stress is determined by their personality and remains consistent regardless of the situation they are in.

Experts hope the first study to [test](#) stress copying styles in mature Senegalese sole, will help farmers screen [fish](#) from a young age to help the species reproduce in captivity and improve aquaculture production.

Scientists found when faced with confinement, restraint or a new environment, younger fish known as juveniles and older fish known as breeders, had similar behavioural patterns and levels of activity, showing consistent responses in animals of different ages.

There was also a correlation between how individuals with the same sort of personality acted across the various tests, suggesting that those who are reactive and fearful or proactive and curious, maintain this behaviour.

Dr Sonia Rey Planellas, Research Fellow in the Institute of Aquaculture, said: "Senegalese sole is a very valuable fish farmed across Europe, however first generation males' failure to reproduce is still a problem affecting production of the species. Animals who are proactive and try to explore are likely to reproduce in captivity so it's important these fish can be identified at a young age.

"The three tests we used to simulate life in captivity was easy to apply and required no special equipment. We hope this can be replicated by fish farmers, large and small, to help establish selection-based breeding programmes and easily identify fish that deal best with stress and will be able to reproduce more successfully in a variety of environments. These Operational Behavioural Screening tests (OBST) can also be used for other species of interest facing similar problems on domestication and production."

The research, which also involved researchers from the Spanish Institute of Oceanography, is published in *Royal Society Open Science*.

Around 120 Senegalese sole take part in five individual behavioural tests and two grouping tests. Cortisol, glucose and lactate in the blood was measured at the end of the tests to measure the stress response.

**More information:** Z. Ibarra-Zatarain et al. Characterization of stress coping style in Senegalese sole () juveniles and breeders for aquaculture, *Royal Society Open Science* (2016). [DOI: 10.1098/rsos.160495](https://doi.org/10.1098/rsos.160495)

Provided by University of Stirling

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