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## A medium-throughput method to phenotype fish for individual feed efficiency

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### ► To cite this version:

Mathieu Besson, François Allal, Béatrice Chatain, Alain Vergnet, Frédéric Clota, et al.. A medium-throughput method to phenotype fish for individual feed efficiency. *Aquaculture Europe* 2017, Oct 2017, Dubrovnik, Croatia. . hal-03155407

**HAL Id: hal-03155407**

**<https://hal.inrae.fr/hal-03155407>**

Submitted on 1 Mar 2021

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# A MEDIUM-THROUGHPUT METHOD TO PHENOTYPE FISH FOR INDIVIDUAL FEED EFFICIENCY



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## Background

Feed conversion ratio (FCR) = ability of fish to convert feed into biomass

$$\text{FCR} = \text{feed intake} / \text{weight gain}$$



Individual feed intake unknown



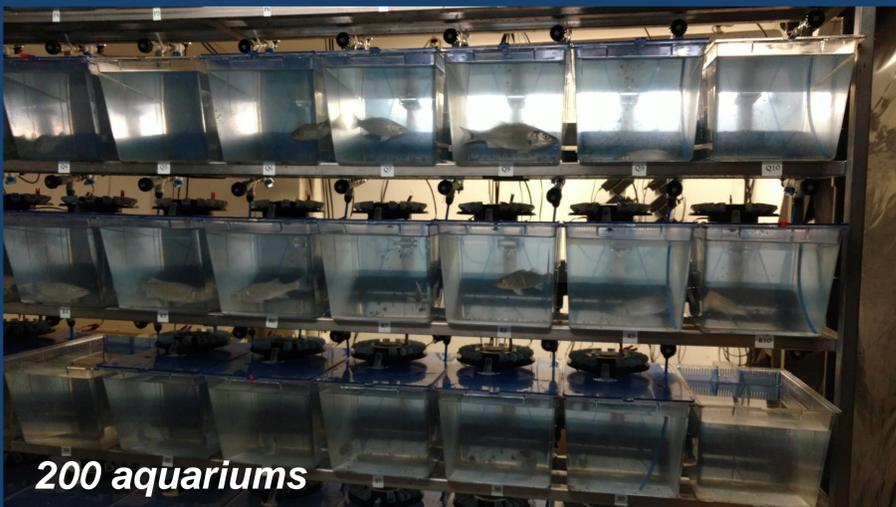
Easy to measure

→ Genetic parameters of FCR are unknown

## Our innovation

Phenotyping fish in individual aquariums

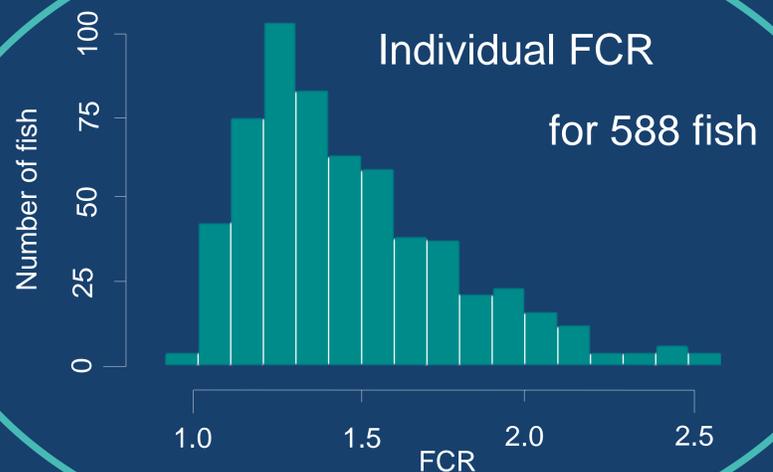
Fish kept in aquariums 6 weeks



200 aquariums

→ Weight gain  
Weight measured every 2 weeks

→ Feed intake  
Automatic delivery of restricted ration  
Uneaten pellets counted daily



## Extra results

Individual phenotype

+

Individual genotype  
(3000 SNPs)

=

$h^2 = 0.26$

Individual FCR can be improved through selective breeding



This research has received funding from the European Union's Horizon 2020 research and innovation programme. This output reflects the views only of the author(s), and the European Union cannot be held responsible for any use which may be made of the information contained therein.