A medium-throughput method to phenotype fish for individual feed efficiency
Mathieu Besson, François Allal, Béatrice Chatain, Alain Vergnet, Frédéric Clota, Sébastien Ferrari, Marc Vandeputte

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

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L’archive ouverte pluridisciplinaire HAL, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d’enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.
A MEDIUM-THROUGHPUT METHOD TO PHENOTYPE FISH FOR INDIVIDUAL FEED EFFICIENCY

M. Besson, F. Allal, B. Chatain A. Vergnet, F. Clota, S. Ferrari & M. Vandeputte

**Background**

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

\[
\text{FCR} = \frac{\text{feed intake}}{\text{weight gain}}
\]

- Individual feed intake unknown
- Genetic parameters of FCR are unknown

**Our innovation**

Phenotyping fish in individual aquariums

Fish kept in aquariums 6 weeks

- 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

200 aquariums for 588 fish

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.