RÉPUBLIQUE FRANÇAISE
Liberté Égalité Fraternité

INRAE AgroParisTech

UMR **1313 - GABI**

GUPPIE

Team leader
Florence Phocas
Delphine Lallias

Global theme
The team is developing projects aimed at adapting livestock populations to rapid climate change and facilitating the agroecological transition of livestock farms..

université PARIS-SACLAY

Attached to the **Université Paris-Saclay**

Attached to the **ABIES doctoral school** (Agriculture, Biology, , Environment, Health)

SAPS Sciences Animales PARIS SACLAY

SAPS member
Sciences Animales Paris-Saclay

CARNOT France Futur Élevage

Member of Institut Carnot **France Futur Elevage**

Animal genetics and integrative biology (GABI)

Useful Genetics Team for Fish and Insects in Agroecology

The GUPPIE team's main mission is to develop work aimed at adapting farmed fish and insect populations to rapid climate change and facilitating the agroecological transition of farms. The main species of interest are rainbow trout and honey bees.

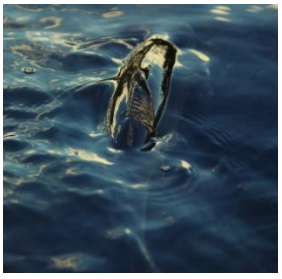
The team's research focuses on three main scientific areas: 1) the genome, microbiome and epigenome of fish; 2) phenotyping and genetics for the agroecological transition; 3) selection for resilient and sustainable farming.

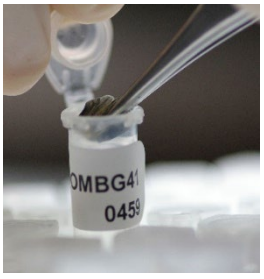
Scientific questions

1- Genomes, microbiome and epigenome of fish

Our work covers detailed exploration of the structure and diversity of rainbow trout genomes, including the pangenome, structural variants and the mitochondrial genome. We will soon begin characterising the diversity of the microbiota associated with rainbow trout. We are studying genome regulation, mainly epigenetic variants. Finally, we are conducting research on the transition from genotype to phenotype, focusing on the validation and impact of causal variants.

Related projects : AgroDiv, HOLOBIONTS et ADAAPT (PEPR Agroécologie et Numérique) ; ResSHV (Carnot France Futur Elevage).





Centre
Île-de-France - Jouy en Josas - Anthony

Domaine de Vilvert
78350 Jouy en Josas

Suivre nos actualités
https://gabi.jouy.hub.inrae.fr/
https://www.linkedin.com/company/umr-gabi
https://bsky.app/profile/umr-gabi.bsky.social

RÉPUBLIQUE FRANÇAISE
Liberté Égalité Fraternité

INRAE AgroParisTech

UMR **1313 – GABI**

Highlights

- Genetic architecture of key traits and genomic selection for resilient and efficient aquaculture: knowledge production and transfer to breeders
- Optimisation of bee breeding programmes

Facilities

- INRAE experimental fish farms: PEIMA (Sizun) and IERP (Jouy en Josas)

Original genetic resources developed by the team

GABI Bioinformatics Unit, Sigenae and genomics platforms: @BRIDGe, GeT-Plage, Gentyane

2- Phenotyping and genetics for the agroecological transition

We study the genetic determinism of key traits to improve the resilience and efficiency of farms, such as health, feed efficiency, and heat tolerance and resistance. In addition, we are conducting research on the interactions between genetics, epigenetics and temperature on sex determination in trout. Finally, we are interested in the group behaviour of trout and insects, with the aim of contributing to the resilience of farms.

Related projects : CoBreeding et ADAAPT (PEPR Agroécologie et Numérique) ; FLAVORESIST et HyperSelect (FEAMPA) ; SEPIAA (BPI France) ; PAH&W et EuAqua.Org (European Union)

3- Selection for resilient and sustainable farming

We are working to develop selection objectives that incorporate the environmental impact of production. In addition, we are developing approaches to modelling selection plans that promote cooperation between animals raised in large groups for resilient farms. Finally, an emerging theme concerns epidemiological-genetic modelling for renewed fish health management.

Related projects : CoBreeding (PEPR Agroécologie et Numérique) ; SEPIAA (BPI France)

Expertise

Aquaculture; Quantitative genetics; Genomics; Epigenetics; Selection; Animal experimentation; Mathematical modelling.

Partner

- Fish and bee breeding professionals: SYSAAF (French Poultry and Aquaculture Breeders' Association), ITSAP (Bee Institute), breeders
- INRAE colleagues specialising in biological functions or social sciences and humanities

Ifremer

- Wageningen University (Netherlands), Roslin Institute (Scotland), University of Padua (Italy), NVI (Norway).).

Publications

https://gabi.jouy.hub.inrae.fr/les-equipes/guppie

Centre
Île-de-France - Jouy en Josas - Anthony

Domaine de Vilvert
78350 Jouy en Josas

Suivre nos actualités
https://gabi.jouy.hub.inrae.fr/
https://www.linkedin.com/company/umr-gabi
https://bsky.app/profile/umr-gabi.bsky.social