

WORKING GROUPS

WG1

Population Structure, Inbreeding Management, and Genetic Diversity

Led by Christoph Sandrock (CH)

WG2

Mating Control

Led by Olga Ameixa (PT)

WG3

Interactions between Genetics, Environment and Community (GxExC)

Led by Gertje Petersen (DE)

WG4

Breeding Objectives

Led by David Deruytter (BE)

WG5

Phenotyping Systems

Led by Esther Ellen (NL)

WG6

Estimation of Breeding Values

Led by Sreten Andonov (MK)

WG7

Dissemination and Communication

Led by Jana Obšteter (SI)

WG8

Inclusion and Representation

Led by Mert Kükreer (TR)

Science Communication Officer

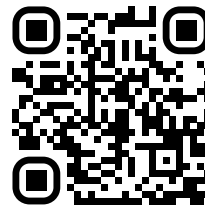
Georgia Baliota (GR)

Grand Awarding Officer

Alexandre Trindade (PT)

JOIN THE INSECT-IMP PROJECT!

Together, we will drive innovation and sustainability in the insect breeding and farming sector.



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COST Insect-IMP WG7

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INSECT-IMP

ANIMAL BREEDING MADE EASY: AN APPROACH TO INSECT GENETIC IMPROVEMENT



REARING, BREEDING, AND FARMING – WHAT'S THE DIFFERENCE?

Rearing involves nurturing and raising insects from their early life stages (such as eggs or larvae) to maturity.



Insects reach the desired stage for subsequent breeding or use as food/feed.

Breeding refers to controlled selection and reproduction of insects to produce offspring that are genetically improved for desired traits.



Improve desirable traits - such as reproductive rates, disease resistance, growth, or nutritional content - across generations in a process known as genetic gain.

Farming insect involves raising and managing insects as livestock for various purposes.



Integrates rearing and breeding: insects are reared to maturity, selectively bred, and then harvested for food, feed, or other valuable products (protein, lipids, biofuel, fertiliser, honey, silk, or compounds for biological and technical applications).

WHY WOULD YOU BREED INSECTS?

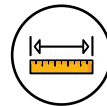
Insect breeding combines science and practice, drawing from traditional livestock programmes. Breeders select parents to improve genetic quality, aiming for e.g. efficient protein production. These eco-friendly, nutrient-rich insects offer a sustainable alternative for food and feed. Their rapid multiplication makes large-scale production feasible, potentially revolutionising approaches to circular agriculture and mitigating hunger and resource depletion.

BREEDER'S TOOLKIT FOR SUCCESSFUL BREEDING

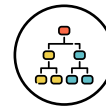
Successful breeding programmes encompass and control all steps of the improvement progress



Identification of Individuals



Accurate Measurement



Pedigree Keeping



Estimation of Genetic Potential



Parent Selection



Controlled Mating

NATURE'S EQUATION TO INSECT SUCCESS



Genes

+



Environment

=



Phenotype

Genes

Think of this as the insect's genetic blueprint - the instructions encoded in its DNA.

Environment

The environment (everything from temperature to food availability) plays a crucial role in determining an insect's phenotype.

Phenotype

The result! It is how the insect actually looks and performs - its growth rate, behaviour, and overall success.

By 2030, the edible insect market is expected to reach \$9.60 billion