

# COST Action Insect-IMP Meeting: GxE in insect breeding & MC meeting

May 19<sup>th</sup> to May 21<sup>st</sup> 2026, Novi Sad, Serbia

*The goal of this meeting is to connect across multiple working groups.*

The idea for this workshop would be to work on how GxE effects multiple areas around insect breeding (phenotyping, mating control, genetic evaluation).

## May 19th, morning - General examples for GxE in Insects

Chair: Gertje Petersen

**09:00 - 09:15** | Greetings, general organizational notes

**09:15 - 10:15** | Introduction

**09:30 - 09:50** | Tom Generalovic: Variability in the black soldier fly

**09:50 - 10:30** | Maria Boukouvala: Unveiling the Khapra beetle *Trogoderma granarium*:  
Biology, behavior, and management of a global quarantine pest

**10:30 - 10:50** | Break

**10:50 - 11:10** | Kemal Karabag: CRISPR-based gene silencing for *Varroa* resistance in honey bees and its implications for host-parasite GxE interactions

**11:10 - 12:00** | Discussion

## May 19th, afternoon - Specific issues around GxE for Insects: Microbiome

Chair: Roel Meyermans

**13:30 - 13:45 | Introduction**

**13:45 - 14:05 |** Veysel Bay: Pathogen-Driven Microbiome Modulation: The Impact of Theileria Infection on Vector Microbial Communities

**14:05 - 14:25 |** Lotte Froninckx: Repeated Feeding Trials with Black Soldier Fly Lines on Varied Diets: Setup and Data Processing Challenges

**14:25 - 14:45 | Break**

**14:45 - 15:05 |** Freek Ijdema: The persistent influence of host lineage on the gut microbiomes of black soldier fly and yellow mealworm

**15:05 - 15:25 |** Marco Tejeda: The role of standardised diet in the control for GxE interactions of BSF

**15:25 - 16:00 | Discussion**

## May 20th, morning – Excursion to the Insect Pilot Farm

**09:00 - 13:00 |**

## May 20th, afternoon – Overcoming GxE in phenotype definition and measurements

Chair: Mert Kükrer

**14:00 - 15:00 |** Seth Murray: Phenomics as a novel way of overcoming / capturing GxE effects

**15:00 - 15:20 |** Frank Ssemakula: Spectroscopic and hyperspectral-imaging based phenotyping approaches for nutritional composition in live BSF larvae

**15:20 - 15:40 | Break**

**15:40 - 16:30 |** Daniel Tolhurst: Leveraging genotype by environment interaction for improving selection and crossing decisions in plant and animal breeding

## **May 21st, morning – How to model GxE and how to account for it in insects in Genetic Evaluation**

Chairs: Jana Osteter / Gertje Petersen

**9:00 - 9:30** | Summary of the last two days and Introduction

**9:50 - 10:30** | Kishor Bommalingegowda - Genetic parameters and genotype-by-diet interactions for growth traits in Australian black soldier fly larvae: Implications for selective breeding

**10:30 - 10:50** | Break

**10:50 - 12:00** | Discussion

## **May 21st, early afternoon – Meeting of the Insect-IMP Management Committee**