



RimPest

WP 3: Simulating and analysing pest trends under climate and crop scenarios

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WP3:

Simulating and analysing pest trends under climate and crop scenarios

➤ WP - duration

➤ Start: 10/22 - End: 09/24

➤ Participating institute

➤ AGES, BOKU, LKÖ, MELES and PFNS

➤ Methodology

➤ Modelling with pest models as impact assessment from climate and climate scenarios

➤ expert interviews

➤ expert workshop




Objectives of the WP:

- ▶ O3.1: **Change** of pest phenology:
 - ▶ past and current conditions
 - ▶ future climate scenarios


- ▶ O3.2: Potential change of increasing **pest risk** affected regions based on climate change scenarios (modelling)

- ▶ O3.3: **Assessment** of pest occurrence and pressure on crops under future climate conditions
 - ▶ modelling
 - ▶ expert knowledge



Task 3.1 - AGES, BOKU, MELES, PFNS (10/22-06/24)

- ▶ Pest models for the selected pests and crops for past and future climate conditions (1980-2100)
 - ▶ daily meteorological data
 - ▶ 2 emission scenarios: RCP4.5 and RCP 8.5
 - ▶ ÖKS15 projections (13 climate change scenarios for Austria)
- ▶ Analyse for specific features with the agroclimatic model AGRICLIM
 - ▶ seasonal temperature
 - ▶ precipitation changes
- ▶ For the past reference period (1980-2020) the pest models will be run for
 - ▶ measured weather data
 - ▶ climate model runs



Task 3.2 - AGES, BOKU, MELES, PFNS (10/22-06/24)

- ▶ The different types of pest specific models will be run under climate scenarios for
 - ▶ the whole domain of Austrian croplands
 - ▶ or specific growing regions when data availability will not limit spatial pest model application (e.g. limitations from model validation).
- ▶ Analysis will aim to identify and map
 - ▶ a) current and potential future hotspots of climate driven pest risks and
 - ▶ b) potential change of spatial pest occurrence risk in Austria by pest model assessments using GIS.



Task 3.3 - AGES, BOKU, LKÖ, MELES, PFNS (10/23-09/24)

- ▶ Review model results achieved by Tasks 3.1-3.2 by expert knowledge, including other parameters which cannot be considered by modelling due to lack of available spatial data sets
 - ▶ future pest management options
 - ▶ future cropping regions potentials
 - ▶ limitations of socio-economic developments etc.
- ▶ Critical analysis of model results in respect to factors other than meteorological which can affect appearance and development of selected pest.



Interaction and links to other WPs

- WP1 will provide data sets for pest simulations
- WP2 will provide tested pest models for the respective pests and crops
- WP3 results will feed into WP4 activities



Milestones

- ▶ M3.1: Simulated and described changes of past/future pest phenology trends of the target pests (M 06/24)
- ▶ M3.2: GIS-based Map of pest occurrence and risks (incl. hot spot regions for the Austrian croplands (M 06/24)
- ▶ M3.3: Evaluated results including a holistic view to past and future pest risks of the target pests (M 09/24)