FOOD & BUSINESS APPLIED RESEARCH FUND

Development, Validation and Dissemination of Integrated Pest Management Packages for Tomato Leafminer (Tuta absoluta) and Fusarium wilt-root knot nematode complex affecting tomato production in Kenya.

Consortium Members:
- Geoffrey Onyga Wafula
  Technical Manager
  Koppert Biological Systems (K) Ltd.
- Dr. George Muhia Kariuki
  Lecturer and Chairman Department of Agricultural Science and Technology
  Kenyatta University
- Ing. Rick van der Pas
  Product Manager
  Koppert BV

Project Description
Tomato plays a critical role in meeting domestic and nutritional food requirements, generation of income and creation of employment for both the rural and urban populations in Kenya. Currently, tomato production is facing major challenges with Tomato leafminer (Tuta absoluta) and Fusarium wilt-root knot nematode complex which causes 80-100% crop loss if not managed. Efforts to manage the pests using chemical pesticides and resistant varieties have not been very successful. Through this project the current status of diversity and identity of tomato leafminer (Tuta absoluta) and Fusarium wilt-root knot nematode complex will be established. This will provide baseline information for development, validation and dissemination of IPM packages that are effective, sustainable and adoptable for management of the target pests. A cross-sectional survey to document current status of the pests will be carried out. Identification of the fusarium wilt, root knot nematode isolates and Tuta absoluta will be done through morphological and molecular characterization. Development and validation of the IPM packages for management of the above pests will be achieved through on-farm scientific trials. Sealing out and dissemination of the best technologies to the target groups will be accomplished through demos, farmer field days and stakeholder workshops. This is expected to result in improved livelihoods of smallholder farmers and improved food security due to improved tomato production.

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<thead>
<tr>
<th>Activity</th>
<th>Preliminary Results</th>
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<tbody>
<tr>
<td>Project inception workshop</td>
<td>• Key stakeholders in the tomato value chain involved and their input included</td>
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<td>Cross-sectional survey in Kirinyaga County-Kenya</td>
<td>• Key information generated for strategic decision making both at farm level and policy level</td>
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<td>• 2 scientific papers being reviewed for submission to open access journals</td>
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<tr>
<td>Morphological and molecular characterisation of isolates</td>
<td>• Results being utilized for development of IPM packages</td>
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<td>Farmer field days and trainings</td>
<td>• 2 field days organized, 300 smallholder farmers and 5 MoA officials trained on IPM &amp; Biological control</td>
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<tr>
<td>On-farm scientific trials</td>
<td>• Development and validation of IPM packages on-going</td>
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Opportunities and challenges

Opportunities:
- Thirst for knowledge on IPM by smallholder farmers
- Potential high demand for alternative and sustainable solutions for insect pests and diseases
- Partnerships and collaborations with relevant stakeholders both in government, NGOs and private sector in the quest to improve the livelihoods of smallholder farmers

Challenges:
- Intense knowledge gap among smallholder farmers on IPM and biological crop protection
- Unstructured extension service systems and mechanisms