Fall Army Worm pest control in Africa

- Sustainable control strategy to attract-and-infect the worm
- African – European network of researchers and local farmers
- Tailored deployment of insect traps

Fall Army Worm | Network | Invading pest | Staple crops | Biocontrol | Pheromone trapping

Fall Army Worm

The Fall Army Worm (FAW) Spodoptera frugiperda (Lepidoptera, Noctuidae) is a major pest in staple crops in North and South America. In October 2016 it invaded Africa, where it is currently spreading with incredible speed.
This pest is seriously threatening the livelihood of millions of small-scale farmers in sub-Saharan Africa. The potential impact of FAW on African wide maize yield lies between 8-20 million tons per year, of total expected value of 10,000 million euro annually. The total expected maize production loss is 40% due to FAW!

New technologies

There is an urgent need for safe, sustainable, non-chemical and environmental friendly alternative control measures that can be easily applied in the field by local farmers. We will develop a sustainable attract & infect strategy involving a combination of pheromone trapping and insect-specific baculoviruses for the control of the invading FAW in Africa. This combination of both methods has not yet been explored and yields exciting opportunities for biological control, surpassing the effectiveness of each single method. With the unique combined expertise and extensive networks of two complementary research groups at University of Amsterdam (Institute for Biodiversity and Ecosystem Dynamics) and Wageningen University (Laboratory of Virology), we feel that we are capable of developing a successful pest management strategy within the timeframe of four years.

Project objectives

1. ***Develop an African – European network*** of researchers and local farmers.
2. ***Develop a successful attract strategy***, based on studying and employing the local sex pheromone signatures and possible interactions between the local and invaded *Spodoptera* species.
3. ***Develop a successful infect strategy*** through the use of viruses which will specifically kill the *Spodoptera frugiperda* larvae.
4. ***Combine and implement attract-and-infect strategies*** that are tailored towards the most efficient deployment of the traps and viruses in control schemes in the field by local farmers.

Results

- Effective and environmentally safe insect traps in combination with biocontrol using baculoviruses
- Local network allowing implementation of an Integrated Pest Management strategy
- A method for local small-scale farmers to protect their livelihood

Consortium

For successful implementation, it is crucial to develop a network with links to field stations and local farmers. Both Universities have existing networks and connections with African research institutes and their contacts with universities and research institutes in Benin and Kenya form an excellent basis for the development and further deployment of such a network. In addition, one of the Principal Investigators Prof. Dr. Astrid Groot (UvA) has recently joined the FAO Monitoring and Early Warning Working Group of the Fall Armyworm. This will further strengthen the international collaboration and ensure our project is embedded in the international initiatives to combat the FAW in Africa.
The two other principal investigators Prof. Dr. van der Vlugt and Dr. Vera Ros are from Wageningen and are specialized in caterpillar-virus interactions and virus ecology.

Both Universities are connected with the Kenyan company Real IPM (www.realipm.com) who produce and provide different biopesticides to small-hold farmers. Collaboration with local companies will ensure implementation and commercialization of the knowledge generated through this project and tailoring them to the needs of the small-hold farmers.

Funding issue

This project will take four years to complete, at least two full-time PhD researchers, access to state of the art research facilities, and interaction with the local community. A Dutch charitable fund, Dioraphte, already committed 350 k€ to this project, also the Universities are able to fund some of the costs, however we are still €300,000 short to start the project. Therefore **we are looking for one or more sponsors to fund the remaining part of the project**.

Contact

If you are interested and want to know more about the project please contact one of the principal researchers Prof. Dr. Groot +31 20 52565400 or A.T.Groot@uva.nl For funding contact Dr. Ir. Peter van der Donk – Business Developer at the Technology Transfer Office of the University of Amsterdam: +31 20 5258553 or P.J.T.vanderDonk@uva.nl – www.ixa.nl