



HAL
open science

Modeling sunflower fungal complex to help design integrated management strategies

Jean-Noel Aubertot, Emmanuelle Mestries, Marie-Anne Vedy-Zecchini,
Philippe Debaeke

► To cite this version:

Jean-Noel Aubertot, Emmanuelle Mestries, Marie-Anne Vedy-Zecchini, Philippe Debaeke. Modeling sunflower fungal complex to help design integrated management strategies. 19. International Sunflower Conference, May 2016, Edirne, Turkey. hal-02739465

HAL Id: hal-02739465

<https://hal.inrae.fr/hal-02739465>

Submitted on 2 Jun 2020

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

19TH INTERNATIONAL SUNFLOWER CONFERENCE



isc 2016

29 MAY – 3 JUNE, 2016

EDİRNE, TURKEY



**(5937) MODELING SUNFLOWER FUNGAL COMPLEX TO HELP DESIGN
INTEGRATED PEST MANAGEMENT STRATEGIES**

***Aubertot JEAN-NOEL*¹, *Mestries EMMANUELLE*², *Vedy-ZECCHINI MARIE-ANNE*¹,
*Philippe DEBAEKE*³**

¹ *Inra*
²

³ *Inra - Agir*

Jean-Noel.Aubertot@toulouse.inra.fr

ABSTRACT

Sunflower is submitted to several major pathogens. Modeling is a key tool to help design Integrated Pest Management strategies to control them. A new qualitative modelling approach is currently under progress using the IPSIM platform (Aubertot and Robin, 2013) for sunflower. It aims at predicting injury profiles on sunflower as a function of cropping practices, soil, weather, and the surroundings of the considered field. Based on a literature review and expert knowledge, hierarchical deterministic bayesian networks were developed. Independent datasets were used to assess their quality of prediction. This communication will present: i) a first draft of IPSIM-Sunflower; ii) the evaluation of its predictive quality; iii) examples of simulation to help design IPM strategies to control the disease; iv) a discussion on the limits and benefits of the approach, along with perspectives.

Key Words : *Helianthus annuus*, *Phoma macdonaldii*, *Phomopsis helianthi*, *Plasmopara halstedii*, *Sclerotinia sclerotiorum*, cultural control