The XPEST modelling platform: an online tool to help design and use models that predict crop losses as a function of injury profiles in given production situations

Jean-Noël Aubertot

endure
diversifying crop protection

Summer School 2016

The role of IPM in mitigating pest development under climate change—modelling approaches
Yield defining factors

Yield reducing
- pests
- climatic disasters

Yield limiting
- water
- nutrients

Yield determining
- radiation
- temperature
- main crop physiological properties

Potential yield

Actual yield

Attainable yield


Multiple pests
SUNFLOWERPEST V1.0

http://147.100.164.75/xpest

Demo...
WHEATPEST under XPEST
**Input variables**

- Evolution of RAD
- Evolution of temperature
- Evolution of RUE

**Output variables**

Evolution of cumulated biomass:
- total biomass
- seeds
- capitulum
- leaf
- stem
- roots

Graphs showing the evolution of various parameters over phenological stages.
Discussion

- XPEST permits to easily create models that represent the impact of one or multiple pests on yield built-up

- These models can represent interactions among damage mechanisms

- Need to enhance research on multiple pest modelling

- Need to strengthen interactions among crop modellers and pest specialists