EuroBlight

A potato late blight network for Europe

EuroBlight tool for the comparison of late blight submodels - Status and perspectives

Hansen JG, Kessel G, Nærstad R, Schepers H, Nielsen BJ, Lassen P

Background

Conclusion EU.NET.ICP (1996 – 1999)

Not possible to build one European DSS

Difficult to compare whole systems

Work on sub-model level

EuroBlight

A potato late blight network for Europe

03 May 2010

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Workshop

Next workshop will be 3-6 May, 2010 in Arras, in the North of France.

Local organisers: Serge Duvauchelle, Ludovic,Dubois, Roselyne Corbiere, Catherine Chatot, Marie-Pascale Latorse and Didier Andrivon.

02 May 2010 **...am and participants list**

The scientific p... 2 May 19.00

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Read the ENDURE news story about this tool here

This work was funded by the ENDURE NoE

New initiatives and

Sub-models Implemented

Plant Plus Disease Risk;
Prophy Disease Pressure

WURBlight
Fungicide degradation from SimCast

Infection pressure, Blight Management

Smith Criteria

Infection risk

MISP

Description of weather data

Obligatory weather data

Hourly values for:

- Temperature in 1,5-2,0 m height [°C]
- Relative humidity in 1,5-2,0 m height [%]
- Precipitation [mm]

Input data for: WURCP, Plant Plus Disease risk, Prophy disease pressure, Blight Management infection pressure, MISP and Smith criteria.

Additional weather data

Hourly values for:

- Leaf wetness [Minutes per hour]
- Global radiation [W/m²]
- Wind speed [m/s]

The additional weather data will be used for the analysis and comparison of different models for calculation of leaf wetness. With the leaf wetness models we will calculate leaf wetness based on standard meteorologicl data. Measured data will be used for validation they will be used as input data for submodels when LW is needed i.e. a new nordic descriptive model for infection risk developed by Ragnhild Nærstad and colleagues

---

All models are calculated with three different thresholds for Rh: 90%, 88% and 85%. This will enable you to analyse model sensitivity to unaccurate weather data and, use different Rh thresholds for different submodels.

All models are run from May to September for 2-4 stations per country. All stations contain results for the years 2006-2009 except S. Aireshire (2006-2008), Marham (2006-2008), Wageningen (2006-2008), Jyndevad (2007-2009). Ploubourgvest (2006), Boigneville (2006-2008) and Villers saint Christophe (2006-2008)

Filled squares indicate locations with weather data available in the database. Open squares indicate stations where we expect to have weather data soon.

To following people are acknowledged for providing weather data to this platform:

Alf Djurberg, Trond Rafos & Ragnhild Nærstad, Ian Barrie, Catherine Chatot & Denis Gaucher, Geert Kessel & Huub Schepers, Tomke Musa, Jens G. Hansen, Asko Hannukkala, Jozefa kapsa, benno Kleinhenz and Riccardo Bugiani.

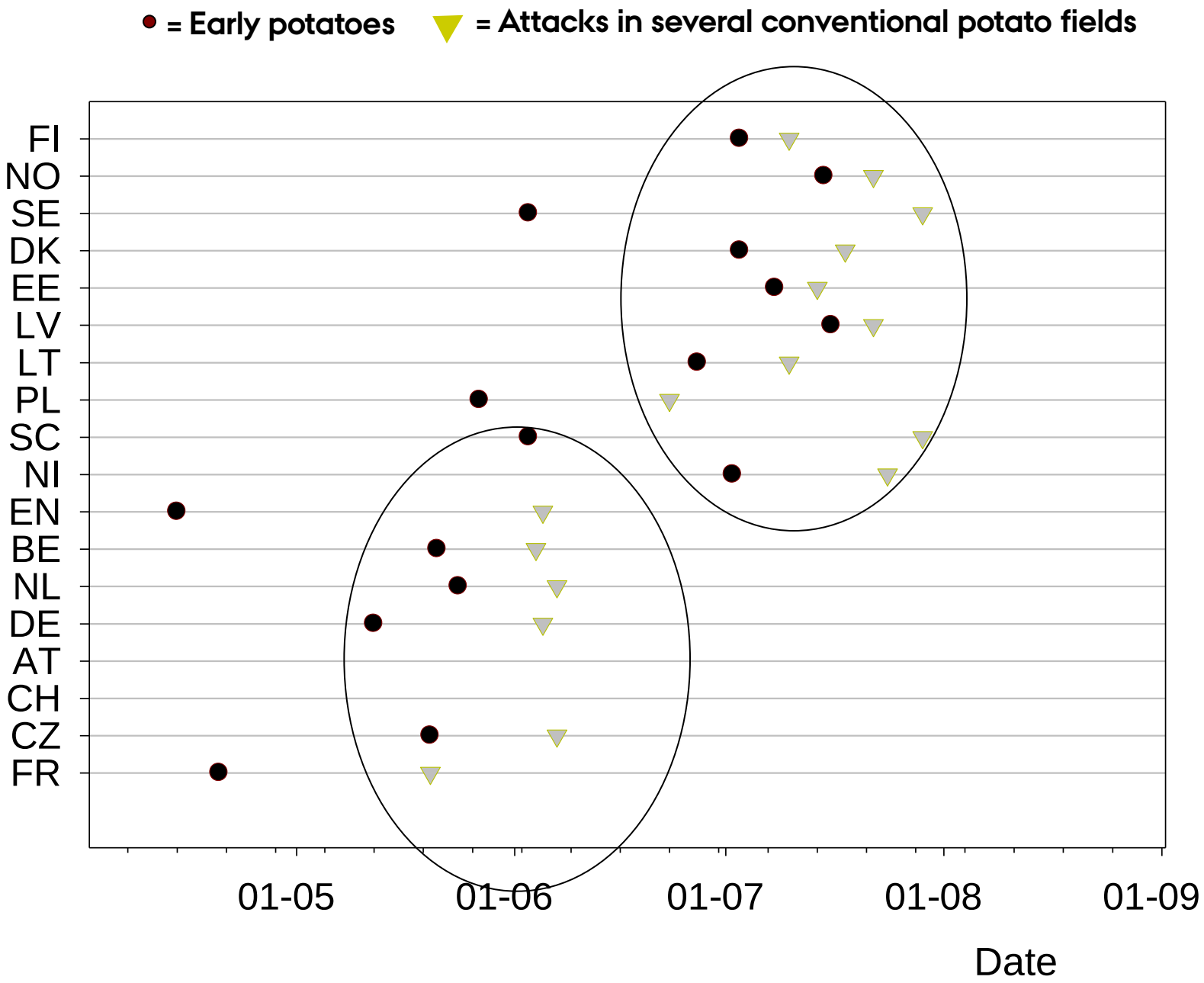
Kees Vogelaar ond Erno Bouma calculated the Disease pressure with Prophy and Peter Raatjes calculated the Plant-Plus disease risk.

Biological date for validation

1. EuroBlight Country reports:
   First infection and date when > 5 conv fields infected

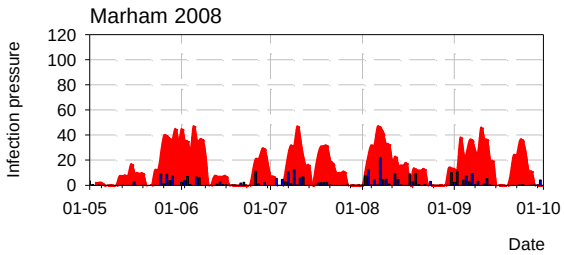
2. Data from trial stations with weather data
   - First infections
   - Disease progress curves from trial stations

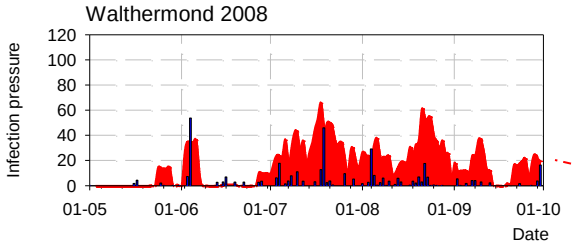
First infections, 2008

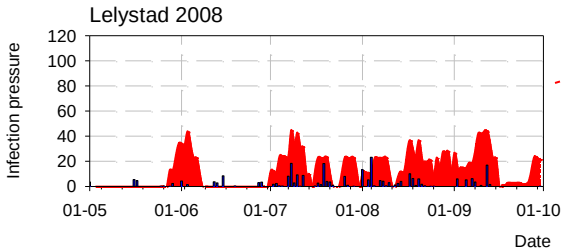


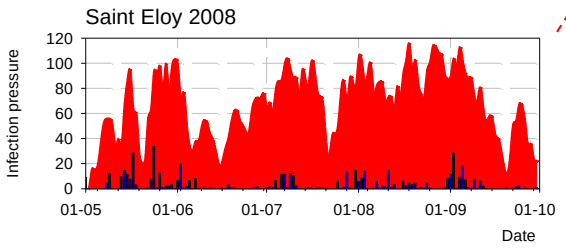
Infection pressure at selected stations in Europe, 2008

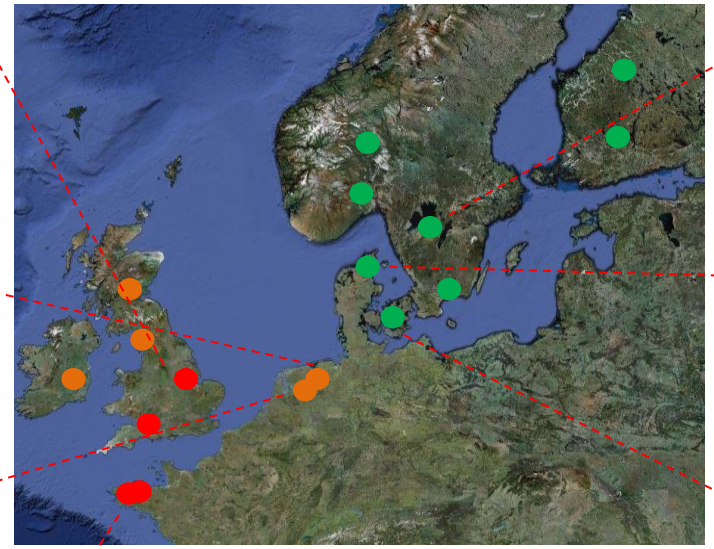
Infection pressure: <20 = Low, 20< Medium <40, >40 = High

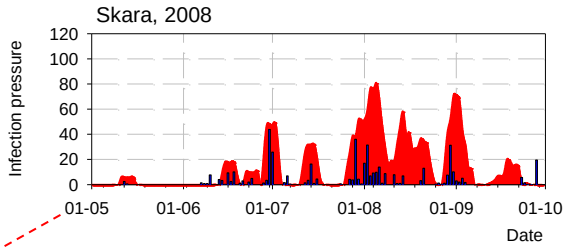


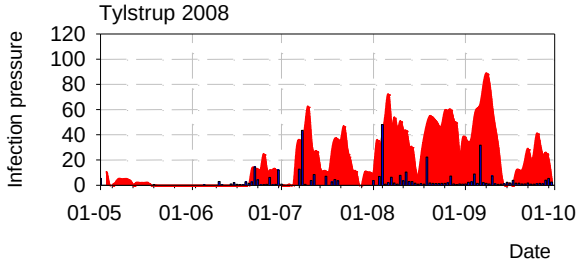


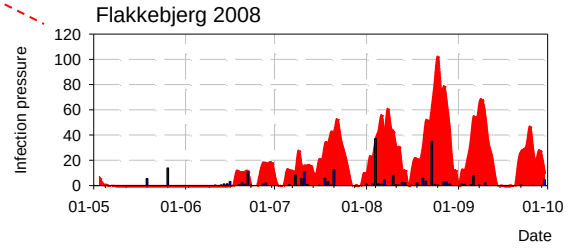












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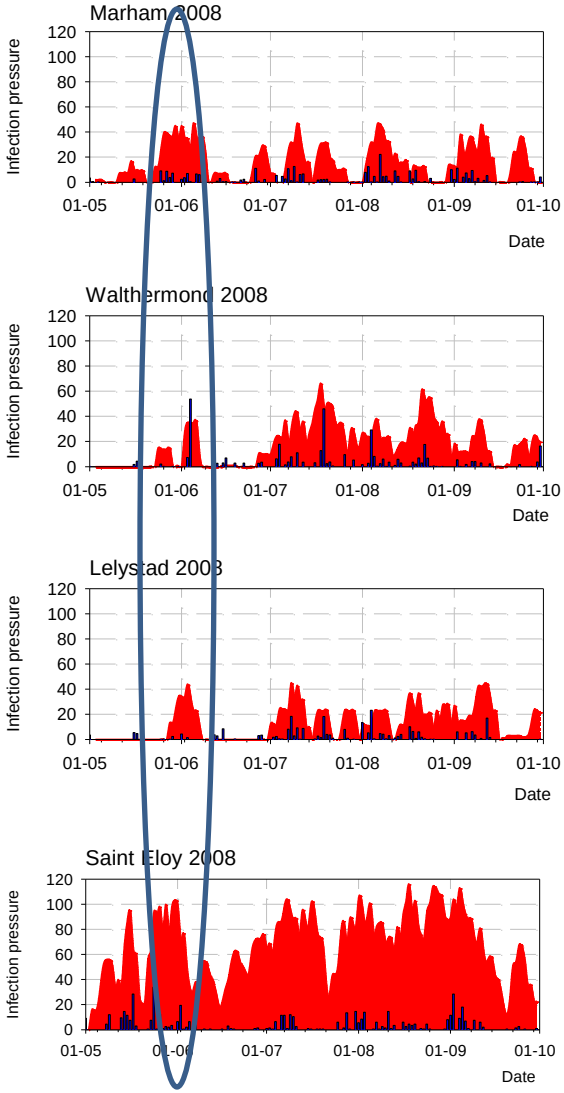

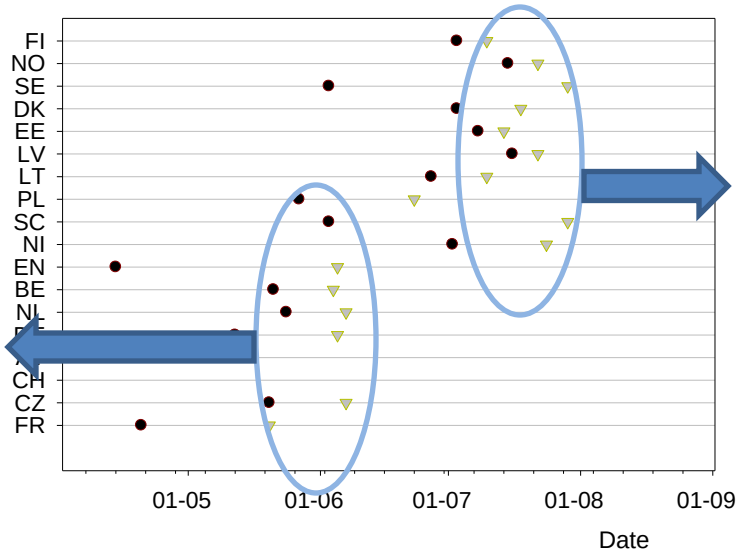

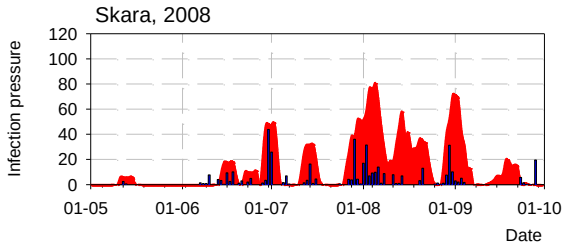

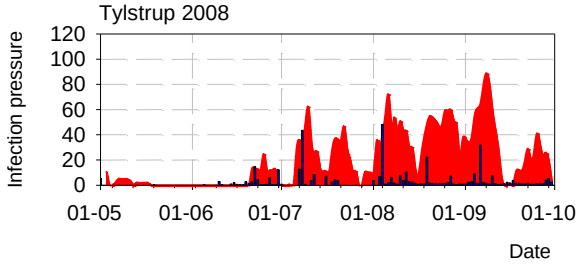

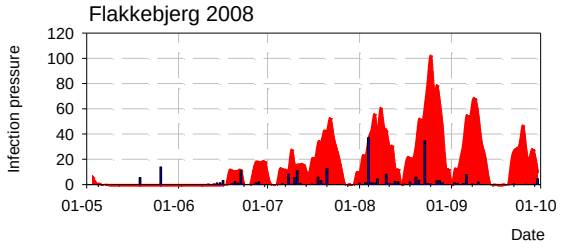

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New initiatives and

Compare submodels

Help

Select specification

Country
Denmark

Weather station
Flakkebjerg

Year
2009

Start date
01/05/2009

End date
30/09/2009

Weather data type
Temperature and precipitation

Number of models
2

Model no. 1
WURCP

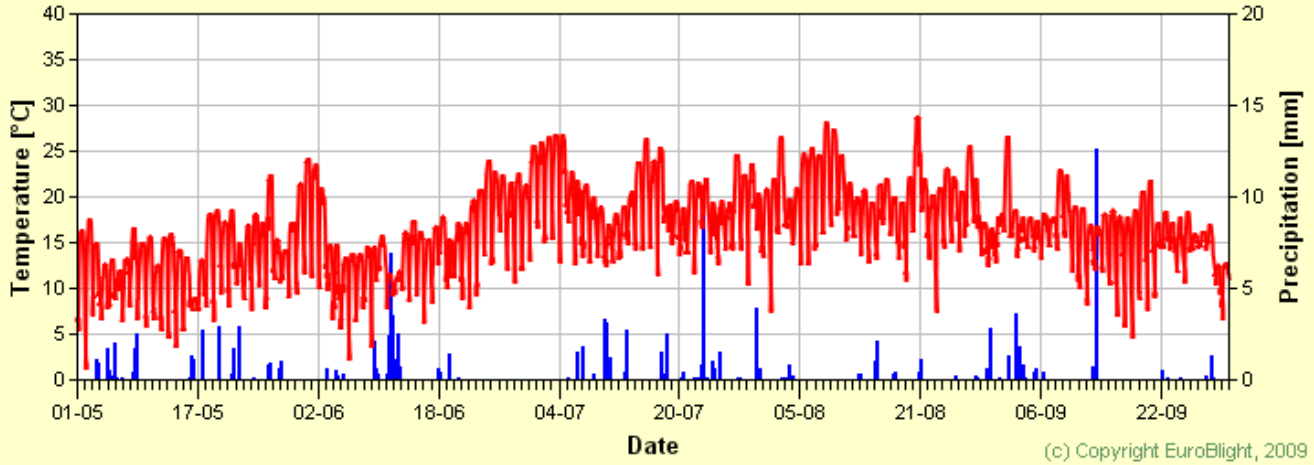
RH threshold:
90% 88% 85%

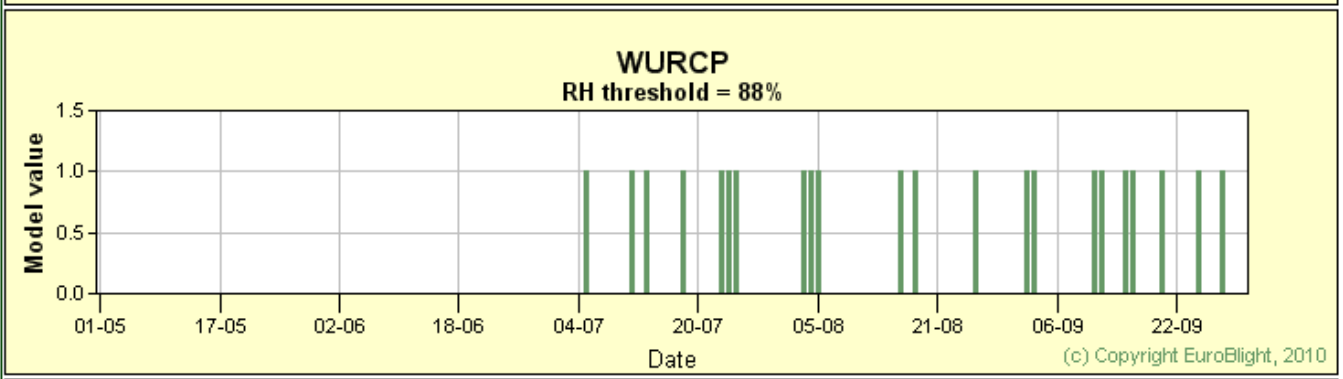
Model no. 2
Infection Pressure

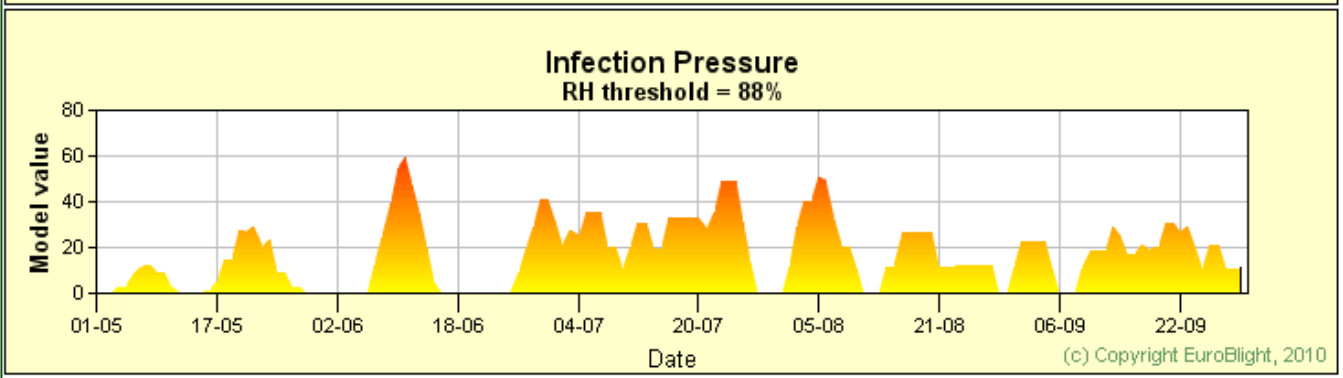
RH threshold:
90% 88% 85%

Show biological data if present

Show new date interval







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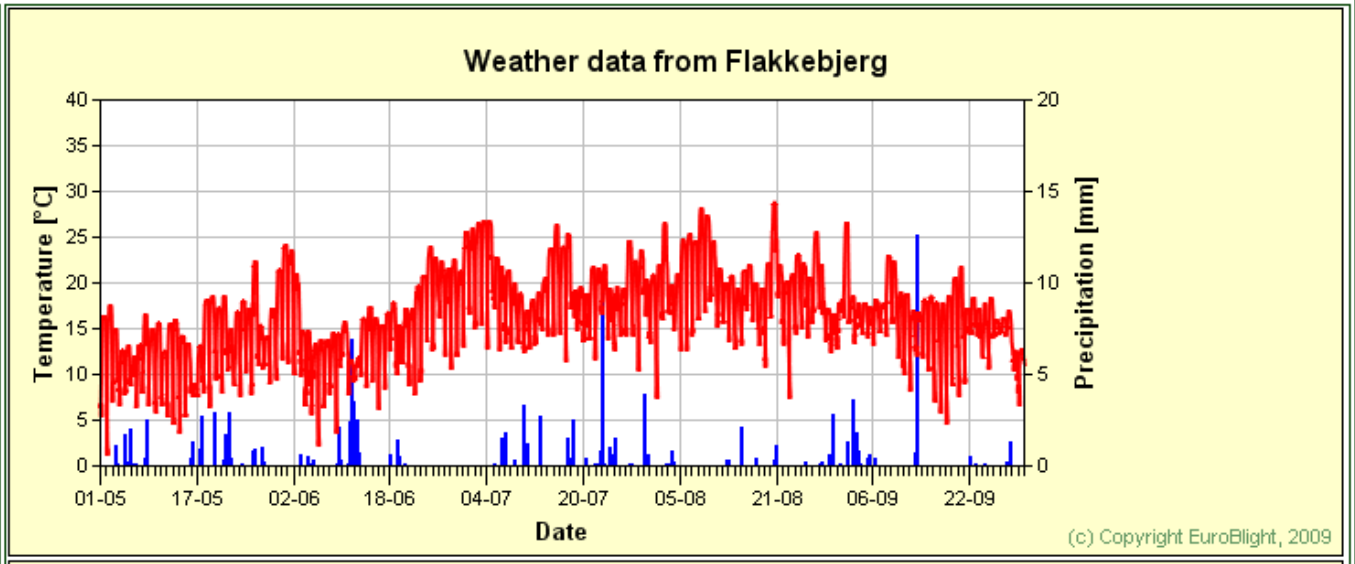

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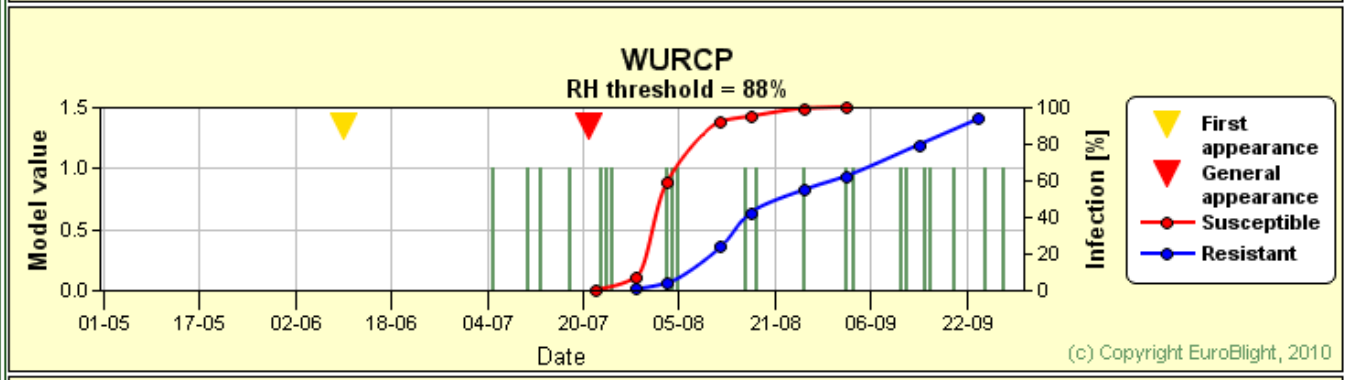

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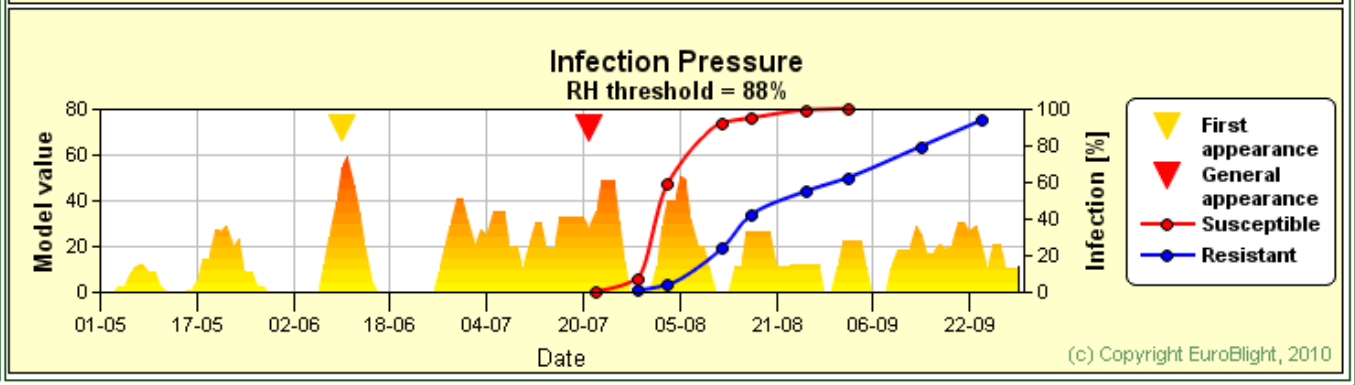

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Select specification

Country
Denmark

Weather station
Flakkebjerg

Year
2008

Start date
01/05/2008

End date
30/09/2008

Weather data type
Temperature and precipitation

Number of models
3

Model no. 1
Infection Pressure

RH threshold:
○ 90% ◉ 88% ○ 85%

Model no. 2
WURCP

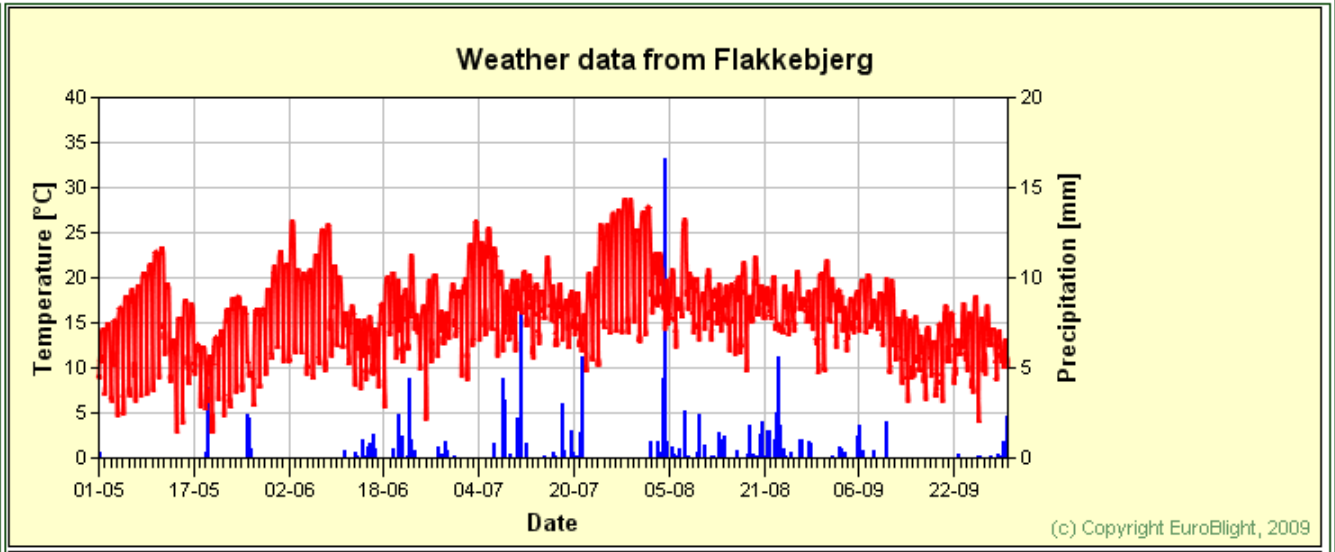
RH threshold:
○ 90% ◉ 88% ○ 85%

Model no. 3
Smith Criteria

RH threshold:
○ 90% ◉ 88% ○ 85%

Show biological data if present ☑

Show new date interval



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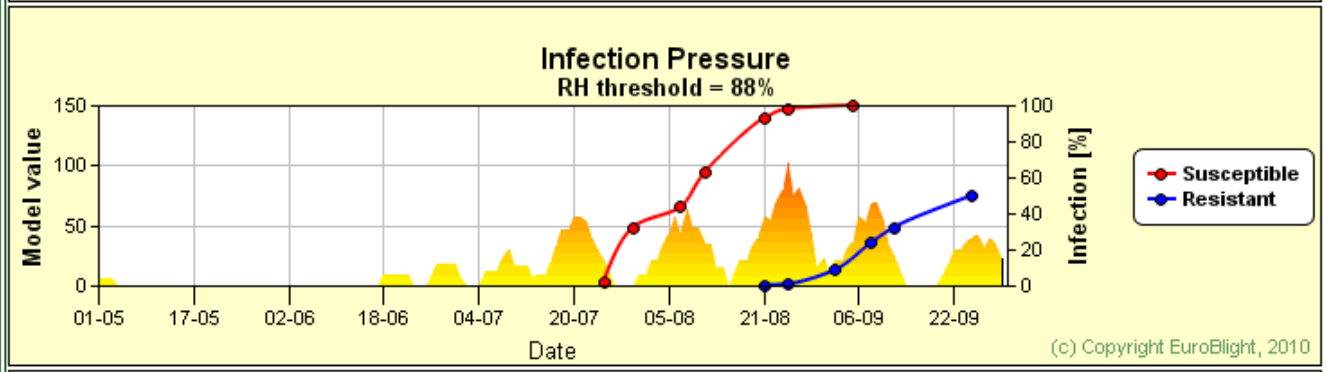

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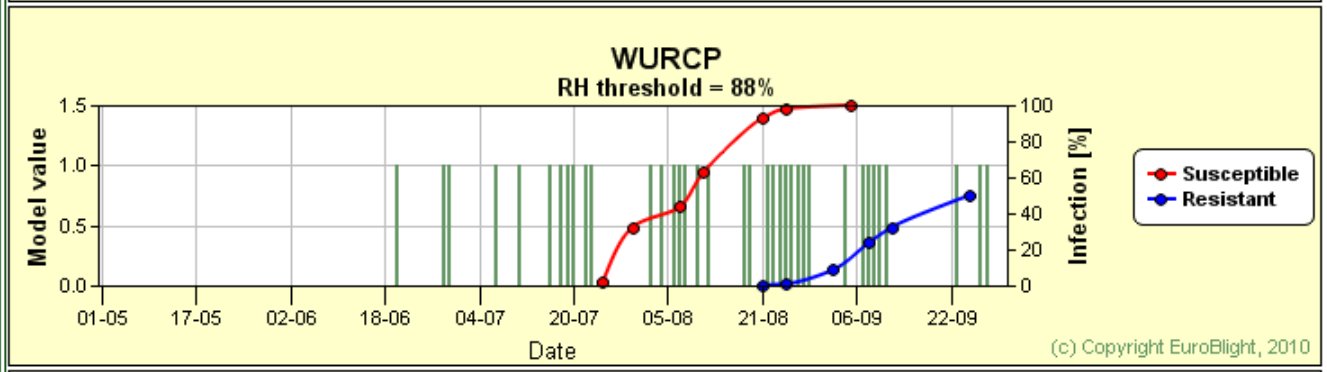

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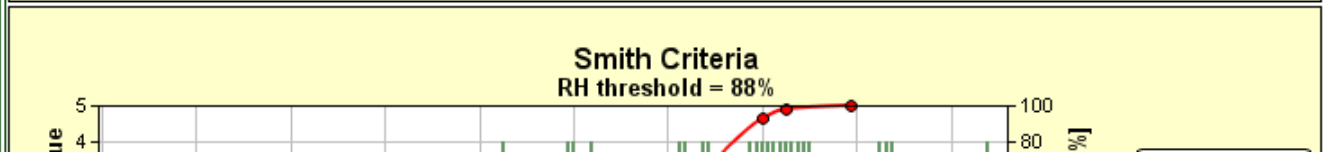


Compare submodels

Help

Select specification

Country: Netherlands

Weather station: Lelystad

Year: 2009

Start date: 01/05/2009 End date: 30/09/2009

Weather data type: Temperature and precipitation

Number of models: 2

Model no. 1: Infection Pressure

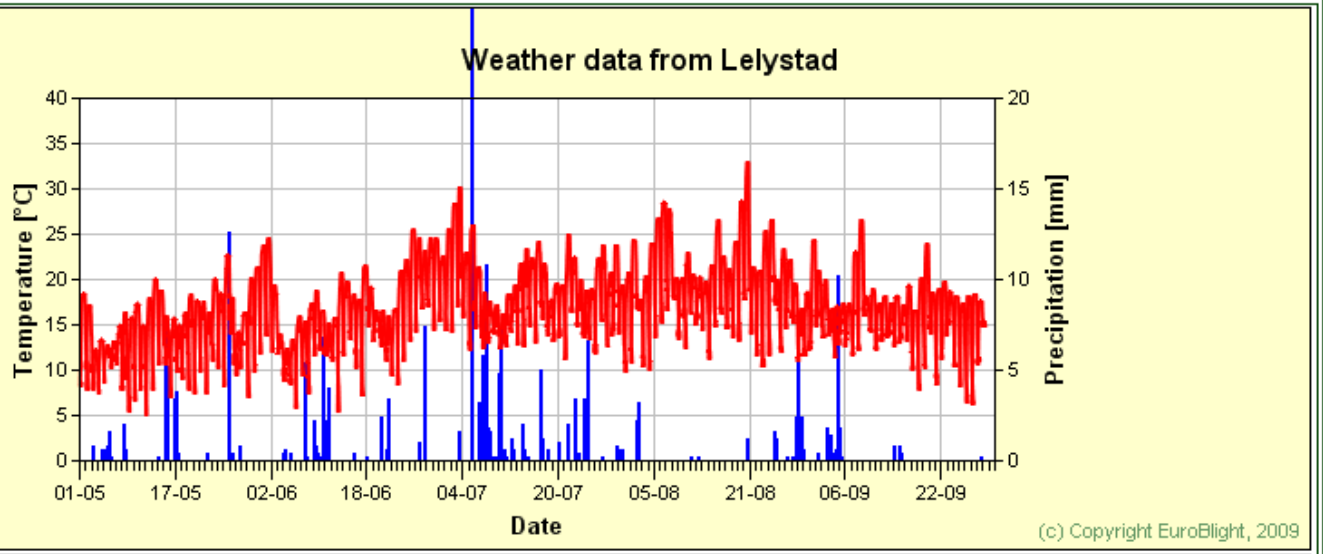
RH threshold: 90% 88% 85%

Model no. 2: WURCP

RH threshold: 90% 88% 85%

Show biological data if present

Show new date interval



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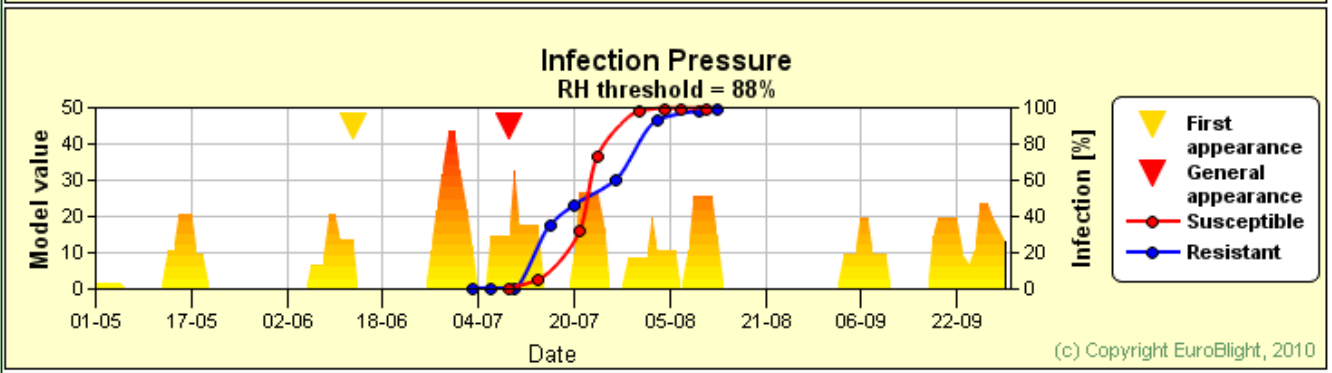

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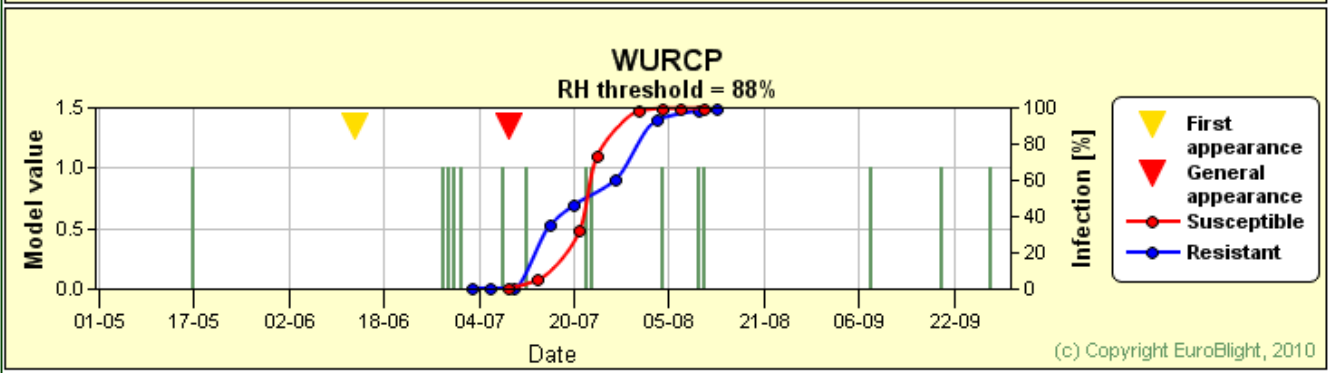

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Compare submodels

Help

Select specification

Country
Netherlands

Weather station
Valthermond

Year
2009

Start date
01/05/2009

End date
30/09/2009

Weather data type
Temperature and precipitation

Number of models
2

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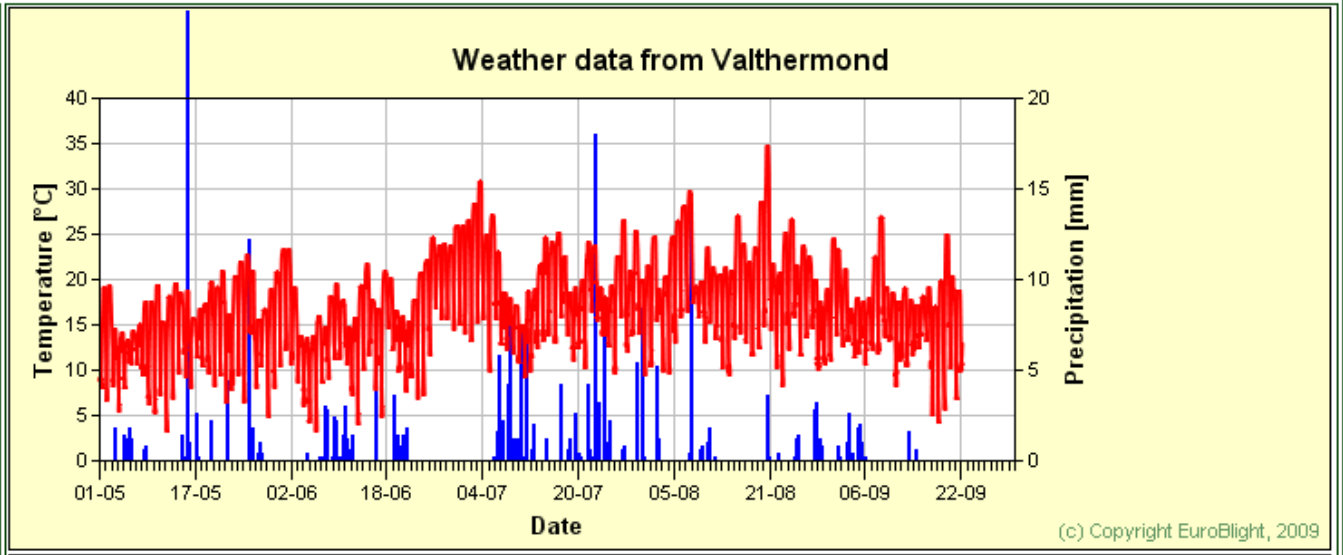
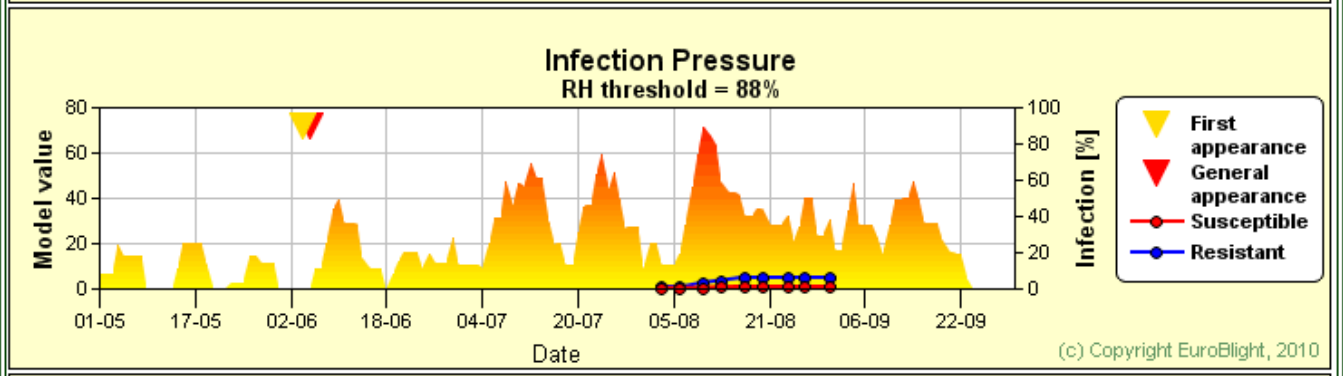
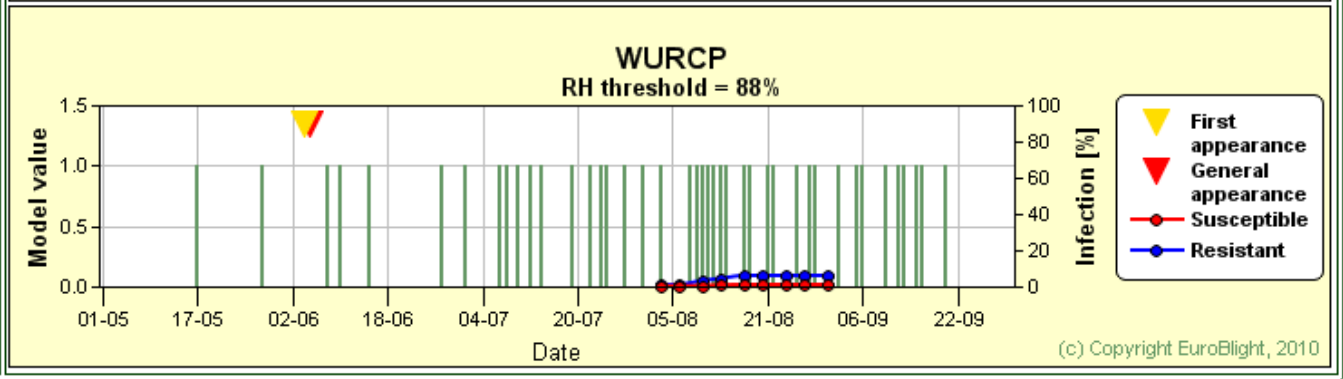






Compare submodels

Help

Select specification

Country
Norway

Weather station
Ås

Year
2008

Start date
01/06/2008

End date
30/09/2008

Weather data type
Temperature and precipitation

Number of models
5

Model no. 1
Hourly Infection

Model no. 2
Hourly Released Spores

Model no. 3
Hourly Attached Spores

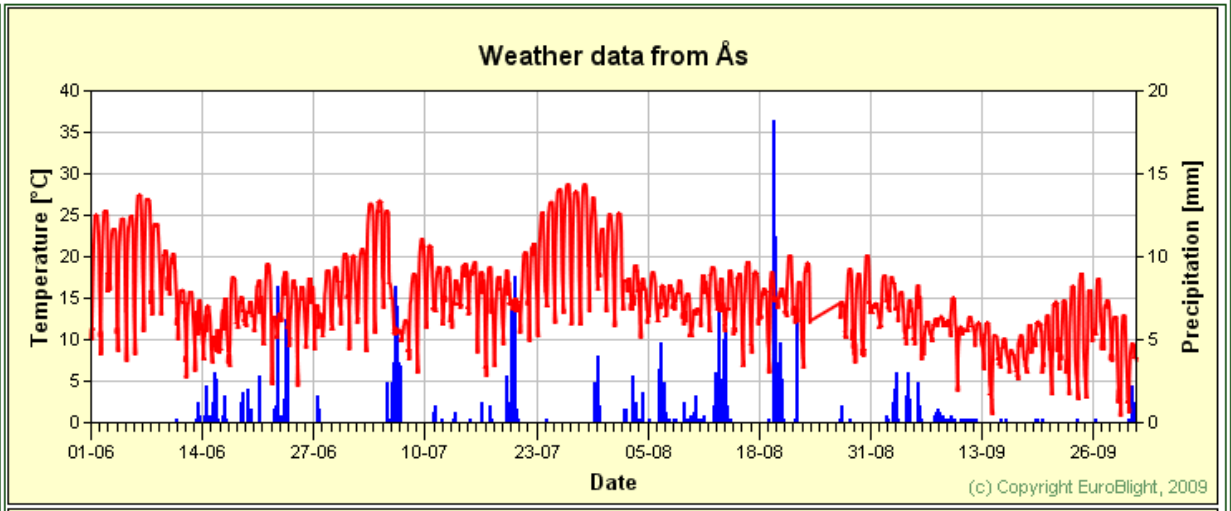
Model no. 4
Spore production, Humid hours

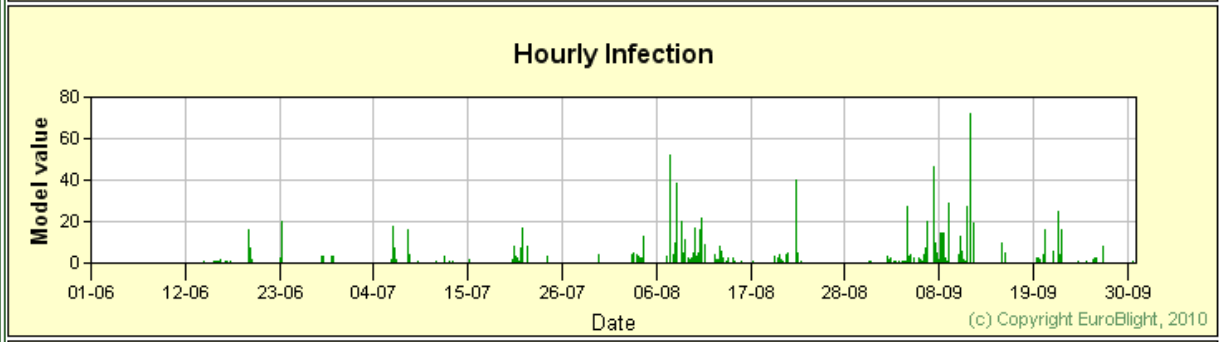
Model no. 5
Infection Pressure

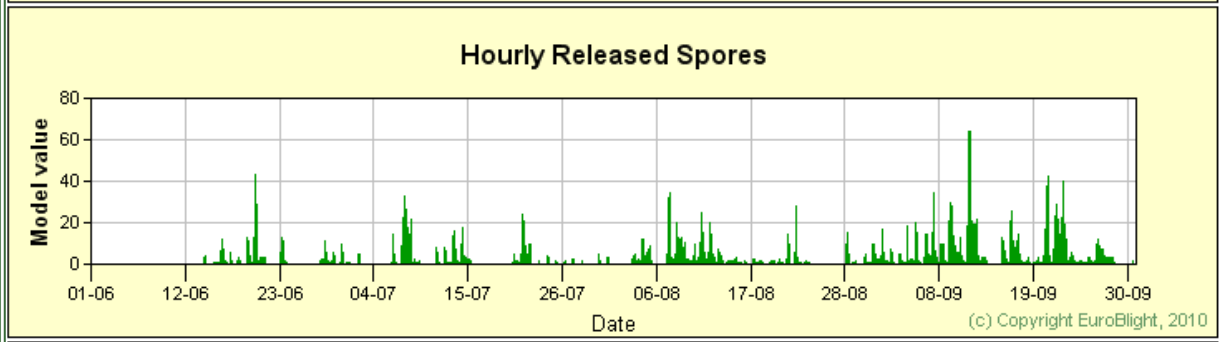
RH threshold:
90% 88% 85%

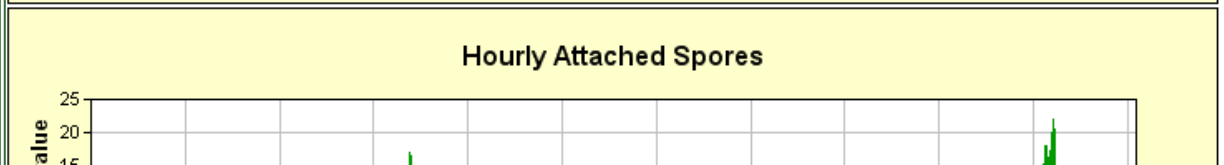
Show biological data if present

Show new date interval









Compare submodels

Help

Select specification

Country: Norway

Weather station: Ås

Year: 2008

Start date: 15-05-2008 End date: 25-08-2008

Weather data type: Temperature and precipitation

Number of models: 5

Model no. 1: Hourly Infection

Model no. 2: Infection Pressure

RH threshold: 90% 88% 85%

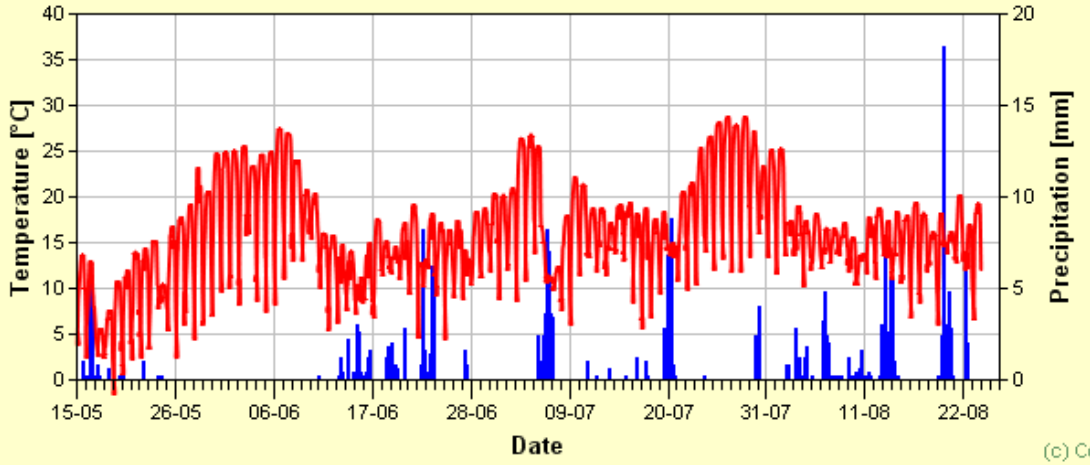
Model no. 3: N/A

Model no. 4: N/A

Model no. 5: N/A

Show biological data if present

Show new date interval



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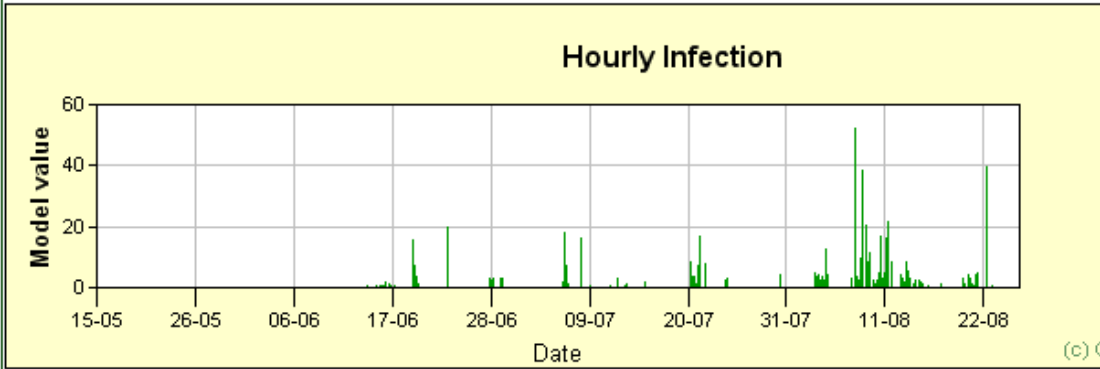

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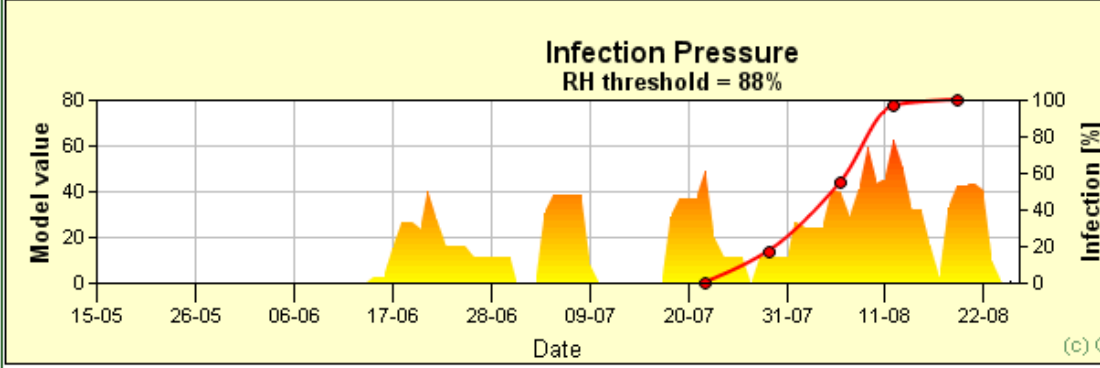

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Conclusions and perspectives

Compare submodels with the same weather data and from different environments

Calculate bligt weather across Europe, - more than one location per country

Predictions of blight weather are often similar- but not always. Analyse the differences.

Partners can upload own weather data and test with own biological data

Implement suitable submodels in own information and decision support system and integrate with local methods and tools.