Epidemiological monitoring: data of interest

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Sugar beet pests and diseases monitoring network, implemented since 2009, has collected more than 25 000 observations, in all geographic and climatic conditions, to cover more than 60 pests and diseases and 10 useful insects. These data are a huge resource for the development of new tools.

Sugar beet epidemiological data

250 to 300 plots each year
Since 2009

130 observations variables
60 pests, diseases, vegetation accidents
10 useful insects, diseases

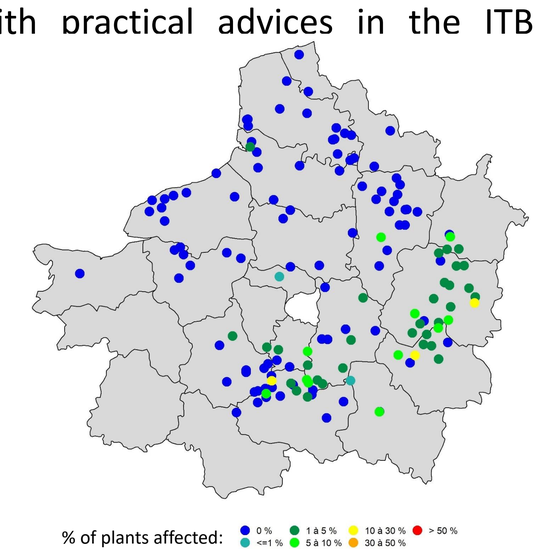
30 0000 data rows for a year
More than 250000 data collected since 2009
Vigicultures© : an information system for multiple crops shared between other institutes

1 observation date : sugar beet development stage & observations variables collected
Sowing date, variety, phytosanitary treatments

Evaluation of regional risk

The weekly observations are validated by regional experts and analysed to evaluate the regional risk. This assessment is released each week regionally to the farmers and advisers in the Plant Health Bulletin, and with practical advices in the ITB regional notes.

For example, the beet moth has mainly damaged south east fields and was not observed in the other regions in 2021.



Contribution to bioagressors models

The volume of data contributes to the conception of bioagressors simulation models, which can be implemented in decision making tools. This modelling contributes either to identify explanatory variables or to estimate yearly pressure characteristics.

CERCOCAP project

This project aims at connecting sensors in fields to agro-climatic models parameterized with leaf spot observation data.
https://www.itbfr.org/collaborations/cercocap/

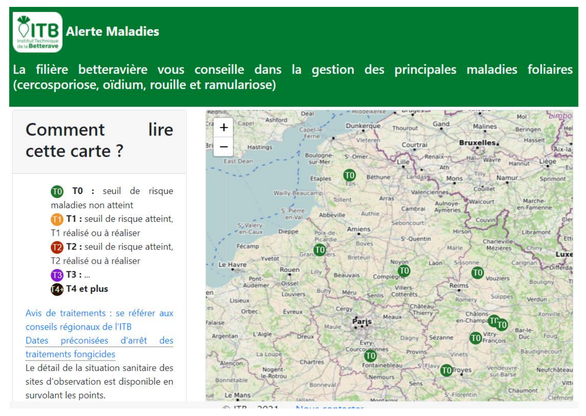
SEPIM project

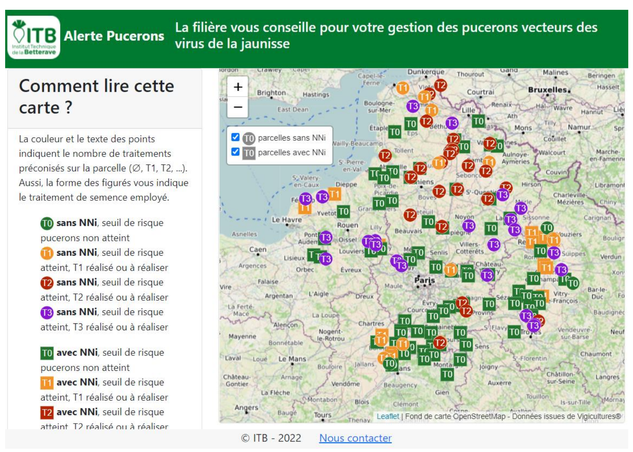
This project is part of French National Plan for research and innovation for Yellow viruses. Green aphids, useful organisms and Yellow viruses observations are analysed to improve the risk estimation and identify levels of action.
https://www.itbfr.org/pnri/projets/modelisation-gestion-risques/

Real-time decision making tools

In order to help farmers to manage the main bioagressors in France, 3 decision making tools have been developed by ITB. This type of tool should be developed on other major pests.

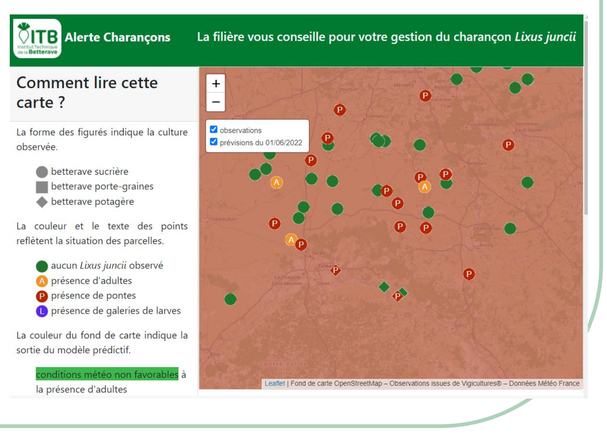
- 'Alerte Maladies Foliaires' for foliar diseases: the decision support tool is a free web interface that provides real-time information on disease pressure. Each site is summarized by a figure which summarizes the number of treatments carried out or to be carried out for this site according to the current risk. The situation is detailed disease by disease by hovering over the points.





- 'Alerte Pucerons' for green aphids: The color of each point is linked to the number of treatments carried out or to be carried out according to the risk of transmission of Yellow viruses by green aphids. The shape of the figures distinguishes neonicotinoid and non neonicotinoid seed treated plots.

- 'Alerte Charançons' for sugar beet weevils *Lixus Juncii*. The color and the text of each plot represent the presence of the adult, its eggs and larval galleries. More over, the map gives access to a graphic of the dynamics of the pest for each plot. In addition, the color of the background layer illustrates the level of risk predicted by the weather model.



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78th IIRB Congress

21st to 23rd June 2022 – Mons, Belgium