French pests and diseases monitoring device for sugar beet protection

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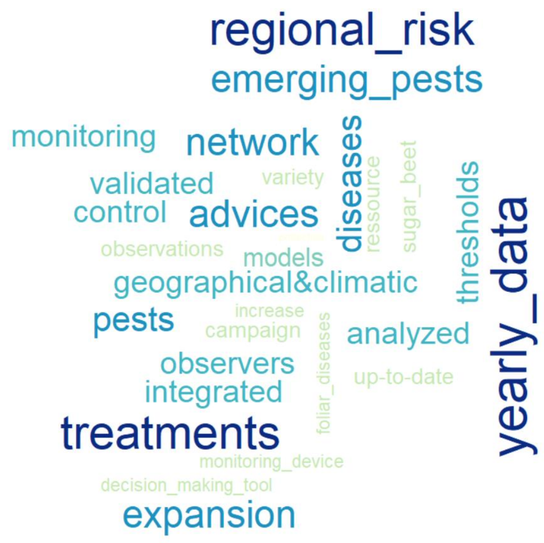
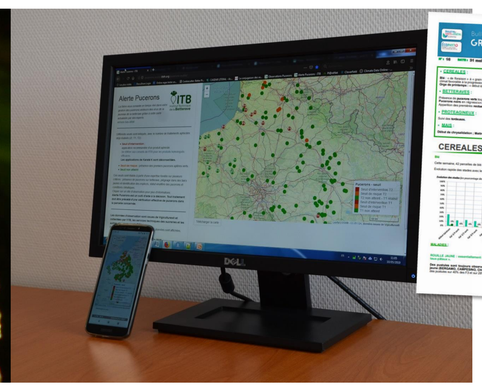
An observation network



Up to 250 yearly plots
More than 100 sugar beet sector observers
All geographical & climatic conditions

60 pests and diseases and 10 useful insects monitored
From sowing to harvest
A field observation each week



Information system to collect, share and consult real-time data: Vigicultures©
Developed by 3 main crops institutes
Validated by regional experts

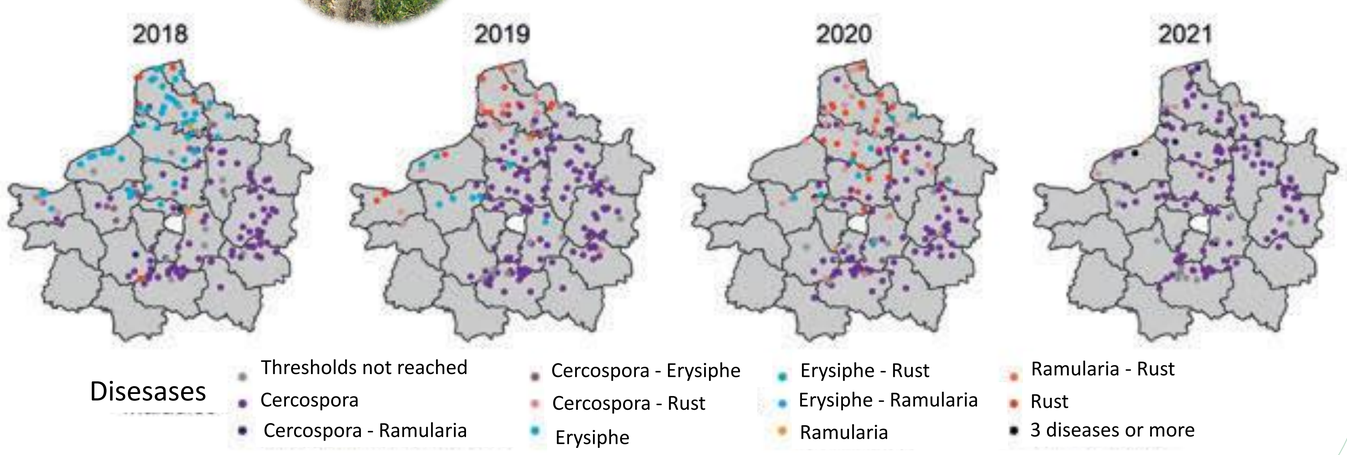
Evaluation of regional risk
A regional plant Health Bulletin each week during the campaign

The sugar beet pests and diseases network has been established in 2007, at the beginning to deal with foliar diseases and beet moth increase. This observation network has been strengthened to include 60 other bioagressors a few years later, and was included in Ecophyto field crops government plan.

To assist pests & diseases management

Each week, observations network indicates the percentage of sugar beet with symptoms. For the 4 main foliar diseases, Cercospora leaf spot, Powdery Mildew, Rust, Ramularia leaf spot, these observations make it possible to detect locally their appearance as early as possible, and then to monitor their development. When the thresholds are reached for a field, it encourages nearby farmers to visit their own fields and to follow thresholds advices. Indeed, the success of fungicide treatments depends on the timing of their application, and the choice of a fungicide adapted to the main disease of the field. At the end of the campaign, the last notation identifies the diseases still observed.

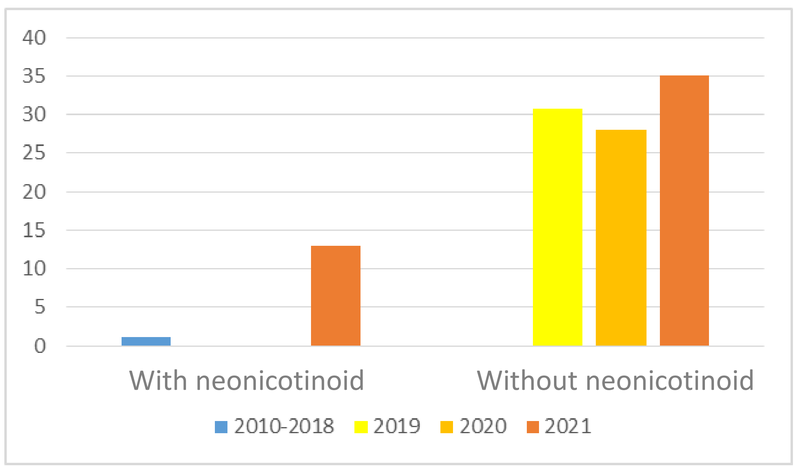
Foliar disease reaching the 1st threshold



To follow the evolution of pests & diseases pressure linked to practices changes

Since the neonicotinoid ban in France, beet flea beetle, thrips and springtails are noted in more than 15 % of the fields, compare to less than 5 % before the ban. Besides, the same trend is analysed for green aphids, far more observed, which lead to a dramatic increase of Yellow viruses in 2020 and to a lesser extent in 2021.

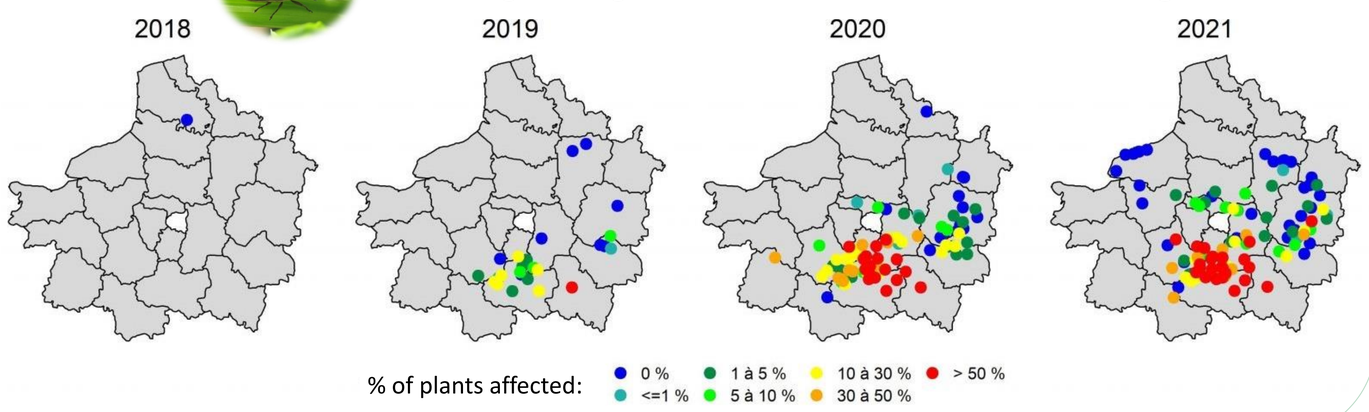
Percentage of fields with Beet flea beetle damages with or without neonicotinoid seed treatment



To follow the expansion of emerging pests

The data, gathered each year, allow us to follow the expansion of emerging pests. The last but not least emerging pest is sugar beet weevils *Lixus Juncii*, noted first in the southern French sugar beet production areas, and since 2019, in almost all production area. This weevil larvae dig galleries in beets, leading to losses material, and serving as a gateway to secondary bioaggressors, such as the root rot *Rhizopus*. New observations variables requested by regional experts have been added to follow the impact of this pest, confirming the flexibility of this network.

Percentage of sugar beet with weevils *Lixus Juncii* damages



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