

Digital technology to support organic growers ? « Pépinière » : a web app to help designing complex vegetable production

Challenges

Implementation of **agroecological practices relying on diversification** (plant biodiversity, longer rotations, intercropping, cover crops, green manures) in vegetable production systems brings:

- Increased **complexity** of spatial and temporal **crop planning**
- Need to assess impacts on the farm **sustainability** (economics, workload, environment) and ensure the possibility to match **marketing strategies** (diversity and quantity of crops through time)

Objective: **developing the “Pépinière”, a free web application** to support existing or converting organic farmers (**re-design**) or for new farms (**design**), part of the **MESCLUN project** funded by Ecophyto 2+ program (OFB, France)

Approach



Collective workshops with farmers, agricultural advisers and teachers, researchers **all over France** // focused interviews with key-users

Transdisciplinary: agronomy; design, management and IT sciences; practitioners' knowledge

Participatory: iterative loops

Needs
Expertise
Tests
Feedbacks

Design of potential computer interfaces

IT development

Results:

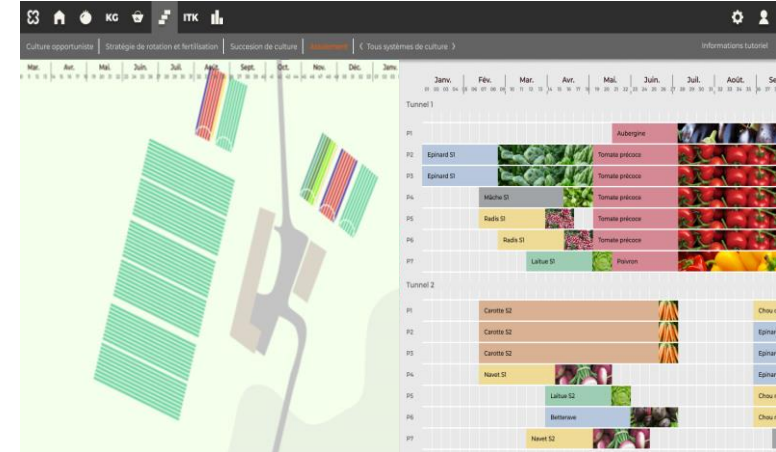
Key features of the tool developed thanks to the participatory approach

To support design :

- enabling simulation and assessment of crop planning without providing an optimal solution (**decisional autonomy**)
- allowing joint **spatial and temporal vision** of cropping cycles
- showing **alerts** when farmers do not respect the rules they have set (marketing, rotation criteria, spatial constraints)

To ease use by farmers :

- **default data** (cropping cycles dates, yields, prices, rotation criteria...) that farmers are free to change or personalize
- **user-friendly** interfaces
- **use flexibility** respecting the diversity and dynamics of farmers' way of thinking
- developing **assessment indicators** that **make sense** for farmers while requiring the less possible amount of input data (**sobriety**)



Perspectives

Real added value in integrating **designers** in research projects to act as **interface** between agronomists and IT engineers and to think about **user experience**

Test with farmers still running till end of 2022 to improve the tool, adapt it to a diversity of contexts and marketing channels, integrate a diversity of possible cover crops and green manures

The “Pépinière” tool of the **MESCLUN project** will be available **online** in 2023 (in French); data and models will be published in open access

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