



PARSADA : a French national plan to anticipate the herbicide molecules withdrawal

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7th – 9th July
Cambridge (UK)



Impact study on **75 active substances** at risk of non-renewal of authorization

- **32 herbicides** active substances

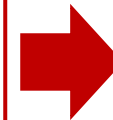


Critical situation regarding
Grass-weeds weed control herbicides

Spring
2023



+ Herbicides **resistance** is increasing...



MINISTÈRE
DE L'AGRICULTURE
ET DE LA SOUVERAINETÉ
ALIMENTAIRE
*Liberté
Égalité
Fraternité*

Private and public research must
anticipate this situation



PARSADA*

Strategic Action Plan for Anticipating
the Potential European Withdrawal of
Active Substances and Developing
Alternative Crop Protection Techniques

*Plan Anticipation Retrait Substance Active et Développement d'Alternatives



“What would be the consequences if sugar beet growers no longer had access to grass-weed control herbicides threatened of nonrenewal ?”

Technical aspect

Economical aspect

PARSADA's projects where ITB is involved



Direct grass control in crops : mechanical weeding, mixed weeding, spot spraying

Started spring 2025



Indirect grass weeding : rotation, prophylaxis, false seeding

Started spring 2025



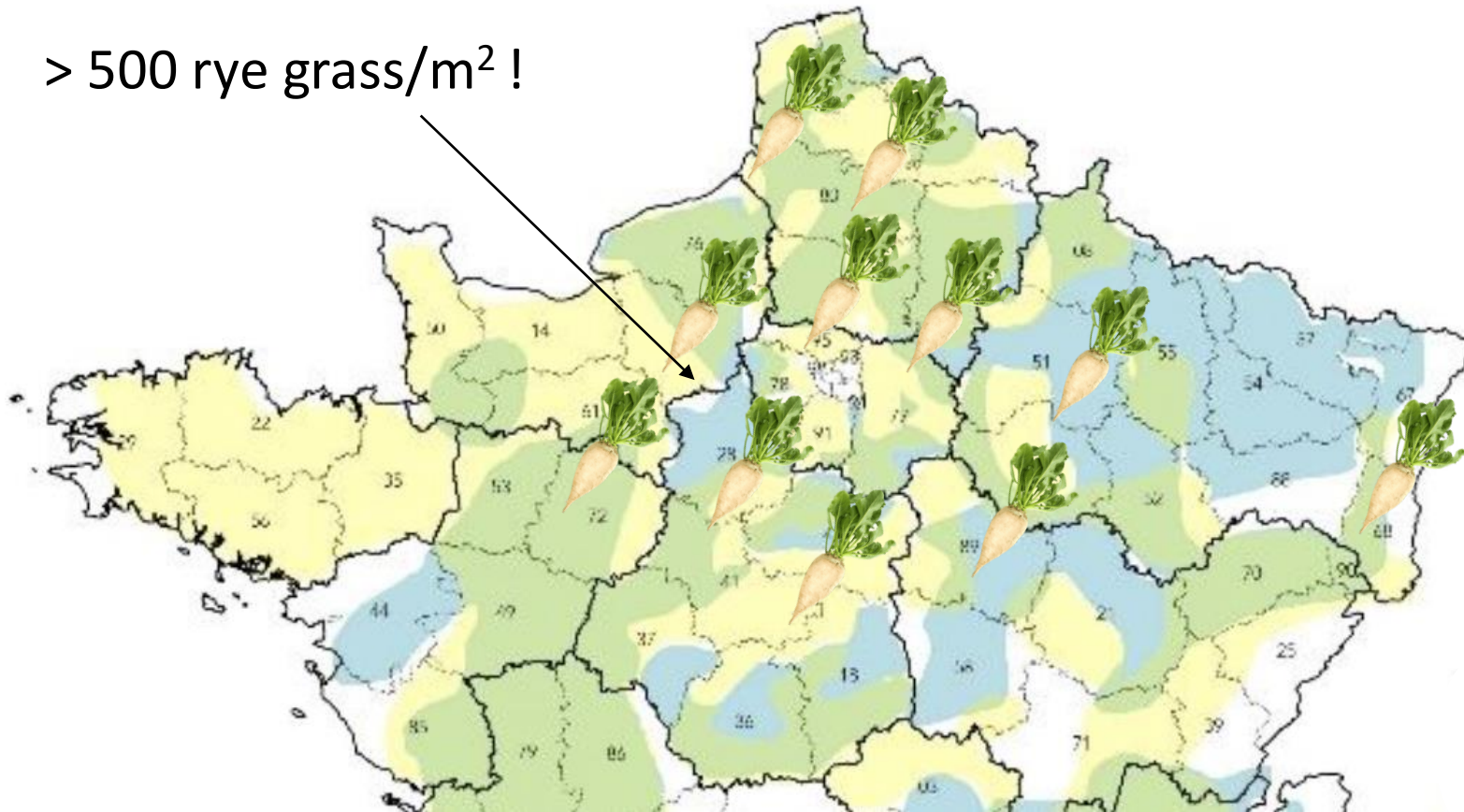
Robotic weeding, new technologies

Started spring 2026

- Objectives :**
- Private and public research working together
 - Create data for grass weed alternative weeding
 - Find alternatives solutions **economically viable**

Grass-weeds situation in sugar beet growing regions

> 500 rye grass/m² !



Grass weeds :

- Rye grass
- Black grass
- Rye grass + Black grass

(Source : Gramicible)

What we experimented at ITB in 2024 and 2025?

Grami
CiBLE

11
trials



Mechanical weeding



Combined weeding

(with/without
band spraying)



Integral weeding

(perpendicular weeding)

Grami
ComBi

6
trials



False seeding



Topping machine



Rotation

How were the experimentations conducted?

Our main concern : **Alternative grass weeding** and consequences of a bad grass weeding

Within the same experimentation field:



Grass untreated
(control)

Without grass herbicide
With dicotyledons herbicide



Conventional crop
management

With grass herbicide
With dicotyledons herbicide



**Alternative grass weeding
solutions (direct or indirect)**

With **or without** grass herbicide
With dicotyledons herbicide

Beet harvest in all the modalities = yield consequences

Mechanical weeding : which implements... for which efficiency?



Mechanical weeding

Chain harrow efficacy on grass-weeds :



Oise trial 2025

28%

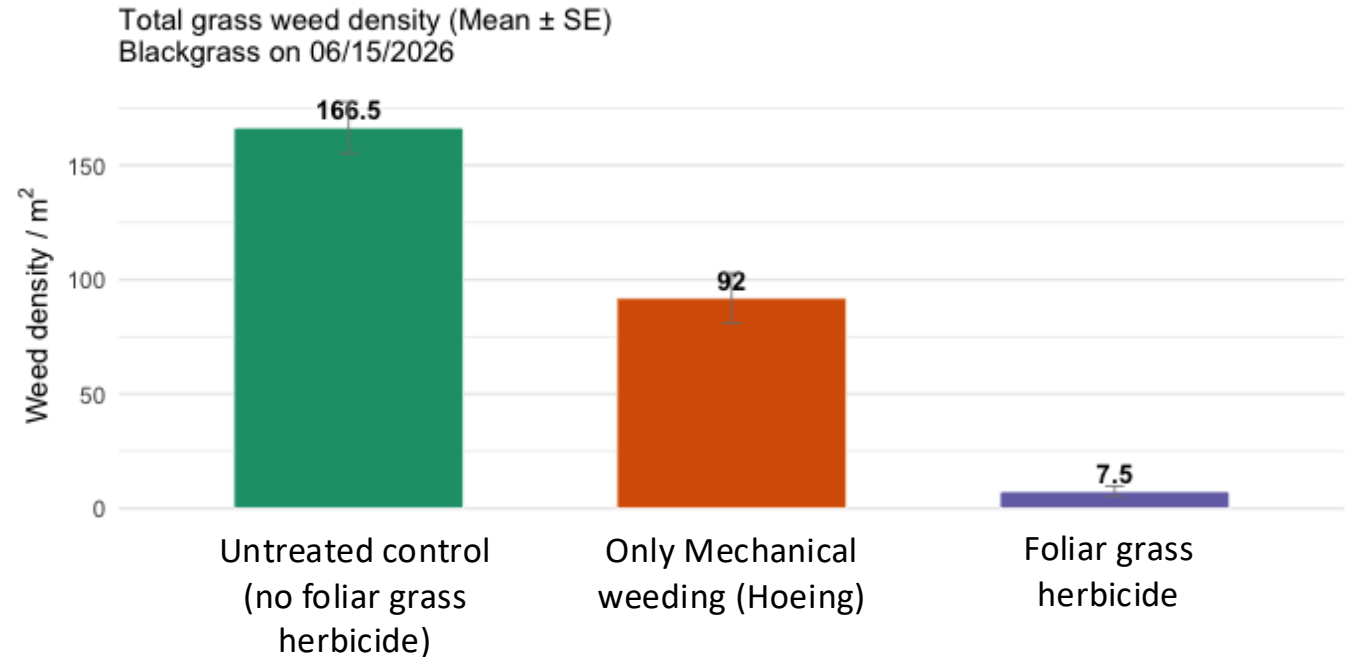


Eure trial 2025

18%



Aisne trial 2026



- Poor in-row grass-weed management with the hoe
- Low to moderate efficiency of the chain harrow (even lower on grass > 3 leaves stage)

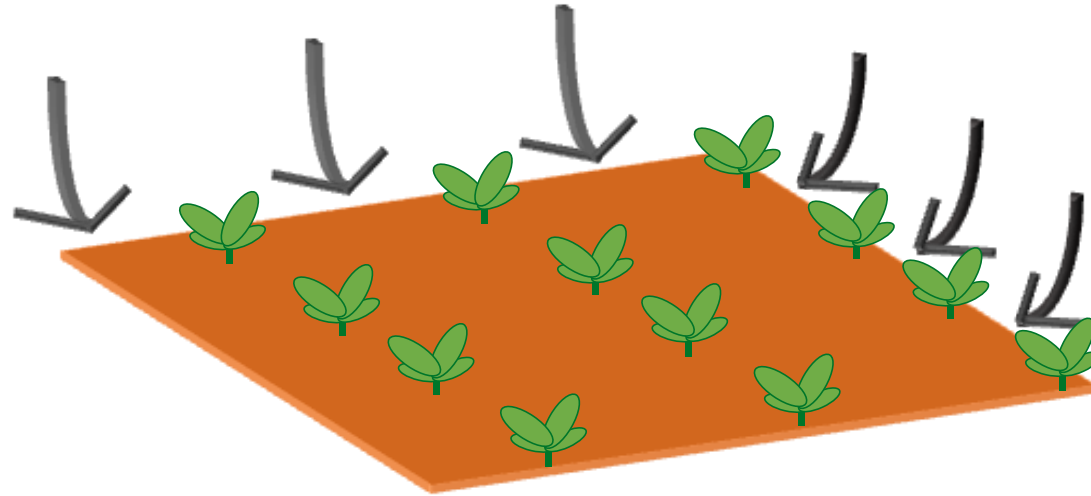
Mechanical weeding: what about integral weeding?



1
trial

Integral
weeding

50 cm x 25 cm



Organic
sugarbeet
trials



**Kverneland
Geoseed II**

No longer
manufactured



Farmdroid



Loiret trial 2025

- **Big loss of population**
(density sow and tractor manoeuvre)
- Discutable effect on weeds

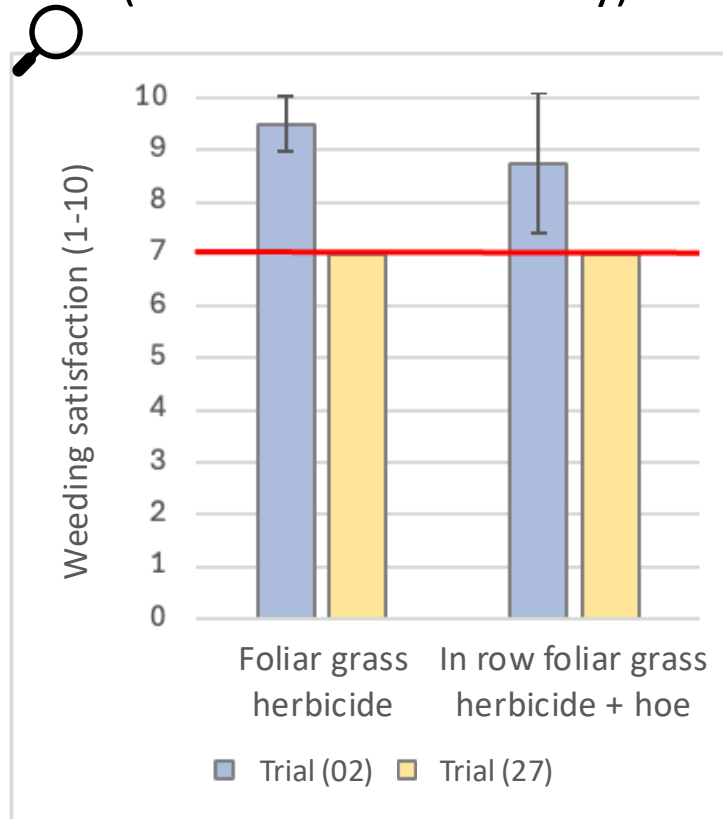


Combined weeding: to gain weeding efficiency in resistance context



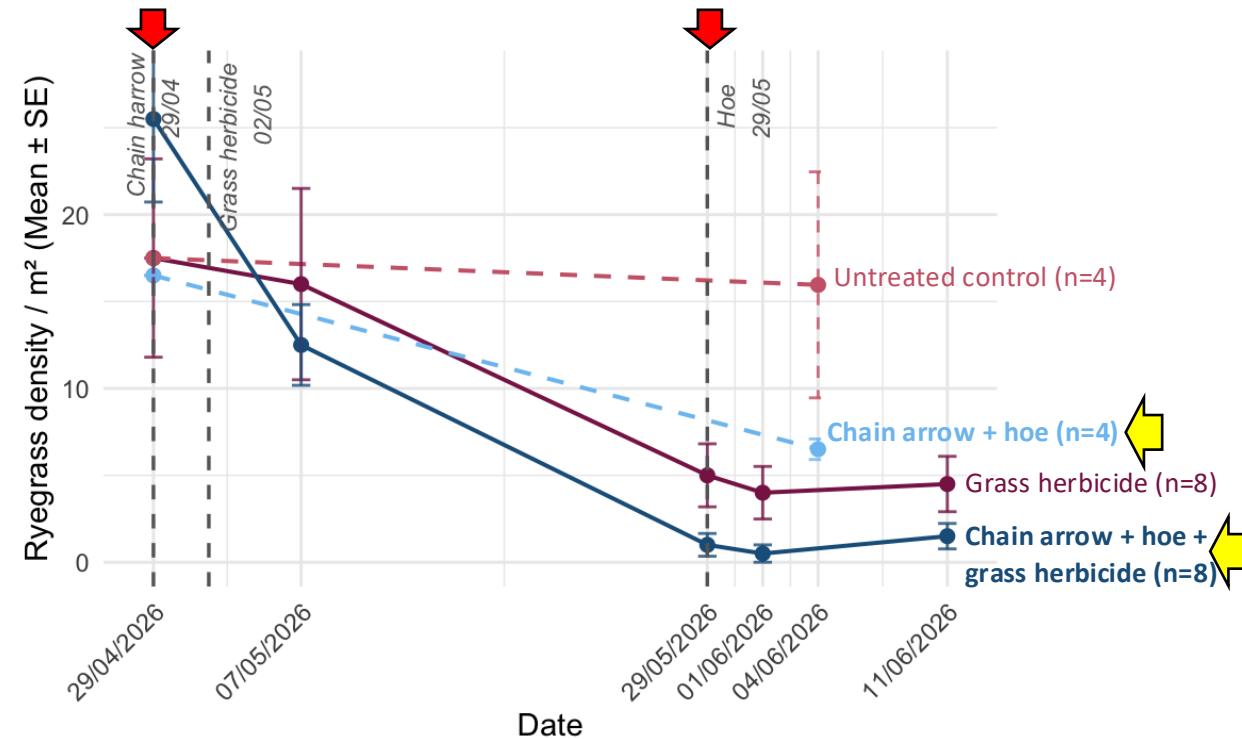
Combined weeding

With band spraying boom
(In-row treatment only)

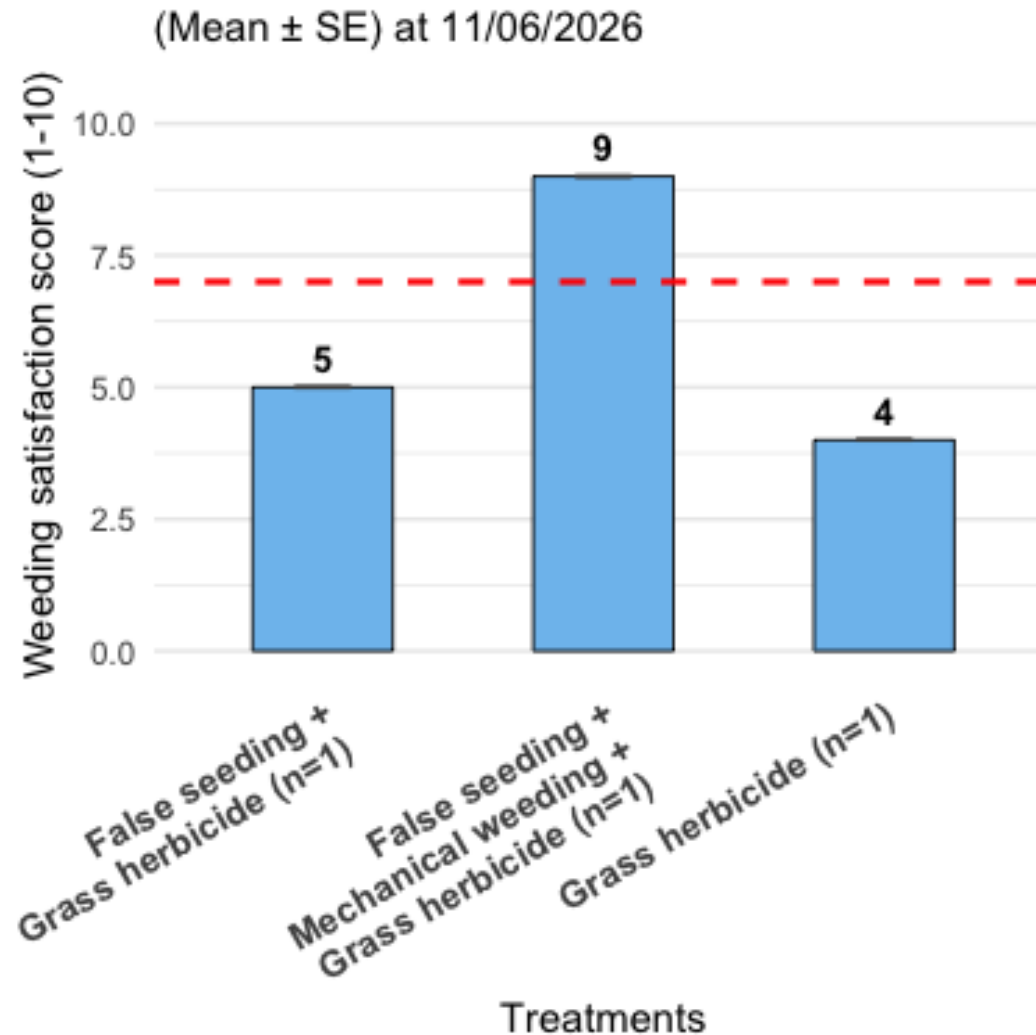
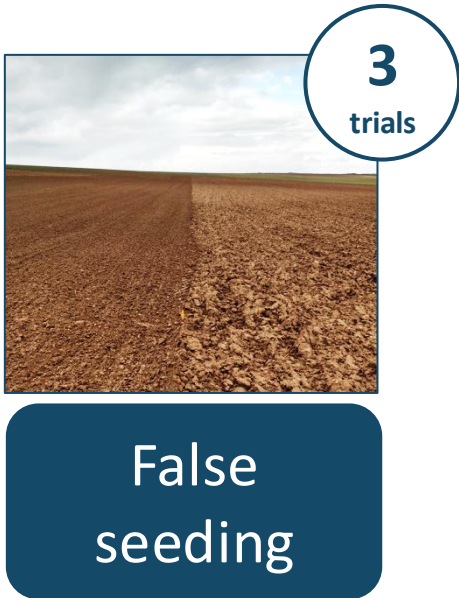


Mechanical weeding and foliar graminicide broadcast

Eure trial 2025



False seeding: discutable efficiency



- Can be interesting to win weeding satisfaction point when grass herbicide efficacy is poor
- False seeding alone : poor efficacy
- **Random effect** ($\leftrightarrow$ weather conditions dependant)
- Best result with **combination** : False seeding + Mechanical weeding + herbicide

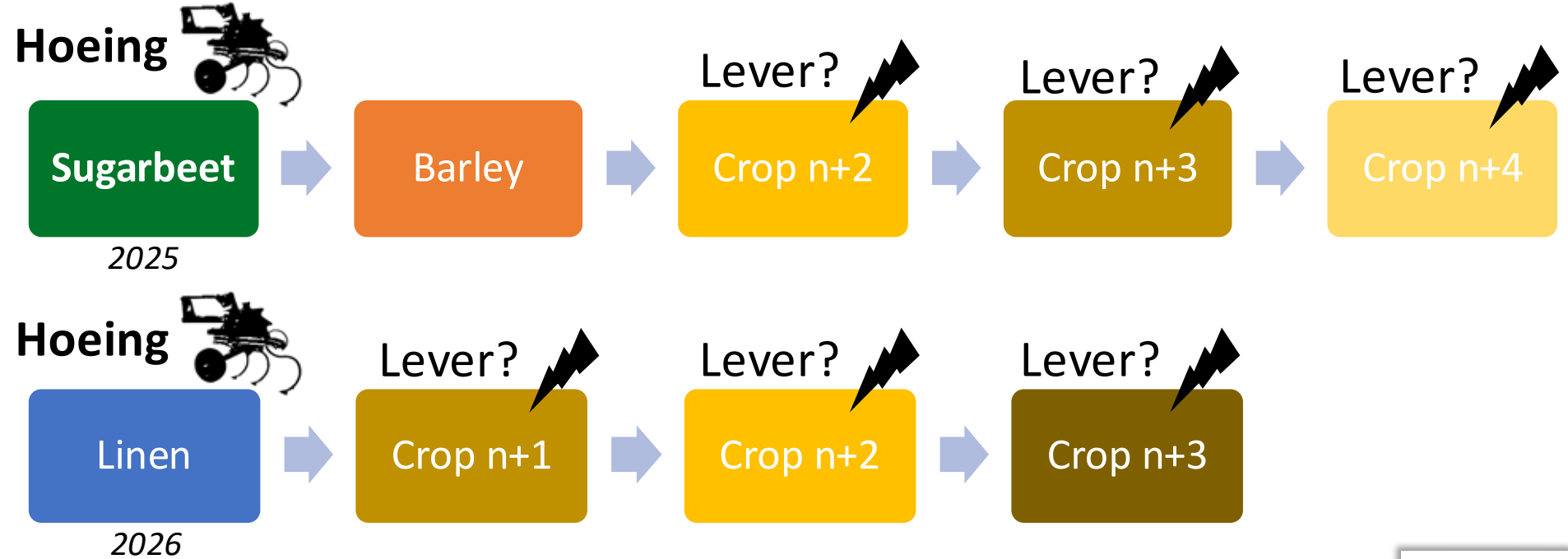
Can crop rotation disrupt the grass-weed germination cycle?



2
trials

2 systems trials with agronomical levers in each crops
Comparison in grass management between the beginning and
after 5 years

Rotation



A lever may
include
modifications
to the
standard crop
rotation

Topper: to adapt for the grass weeds

1

trial



Topping
machine



Zürn topper with
seeds recuperation

Control without topping



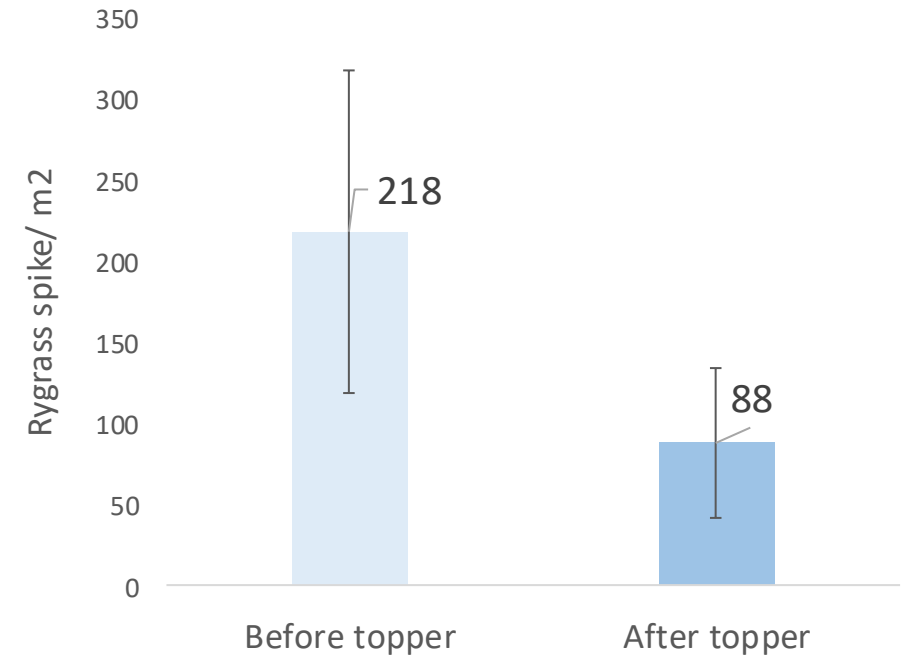
Oise trial 2025



Adapt the timing of intervention
relative to other weeds

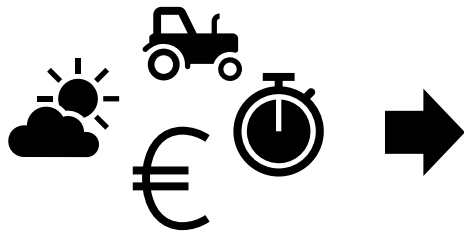


Oise trial 2025



Alternative grass weeding... but at what cost?

Each alternative solutions is studied in a **multicriterial analysis** with **SYSTERRE**



Which consequences on working time? On work organization? On economic margins? On CO₂ emissions? etc.

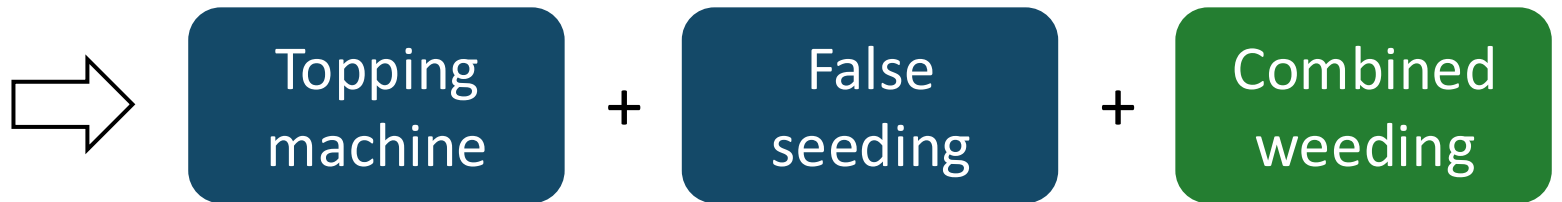
Example on economic margins for the whole sugarbeet management :



Current conclusion ... to confirm

- According to the first results, grass herbicide molecules **are essentials** for grass management ...
- Mechanical weeding is a good complement to herbicide in a context of resistance.
- Grass resistance herbicide is rising! The question is no more “how to do without grass herbicide?”, it is more like “Even with herbicide my field is dirty, **how can I improve my weeding efficiency at reasonable cost?**”.

In a context of resistance, **levers combination** is the key



Dés herb Avenir



May 12, from 2:00 to 5:00 pm & **May 13, 2027**, from 9:00 am to 12:00 pm

Tilloy-lès-Mofflaines (170 km north of Paris)

Thanks for your attention



Any questions?



Avec le concours financier de

est financé dans le cadre
de la stratégie **écophyto**



GOUVERNEMENT

*Liberté
Égalité
Fraternité*

écophyto
Réduire et améliorer l'utilisation des phytos

La responsabilité du Ministère chargé de l'agriculture ne saurait être engagée.

