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# EUBSSP report on “Plant Protection” and plant protection challenges related to recent sugar beet crops



**Elisabeth Lacoste**  
Director

Civil Dialog Group Arable Crops – Sugar – 18 November 2020

- The EU BSSP has been founded in 2015 with the objective to disseminate and communicate on the good practices in sugar beet sector
- Sustainability at the heart of institutional discussion on CAP, trade, energy & environment (climate change) policies and at the heart of the civil society concerns
- European beet sugar recognized as a sustainable crop and product, the sector wanted to engage dialogue with stakeholders and make visible and transparent the sustainability of our sector

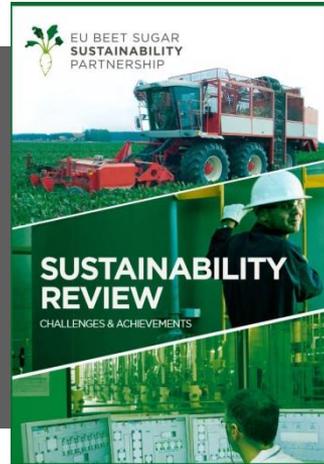


[sustainablesugar.eu](https://sustainablesugar.eu)

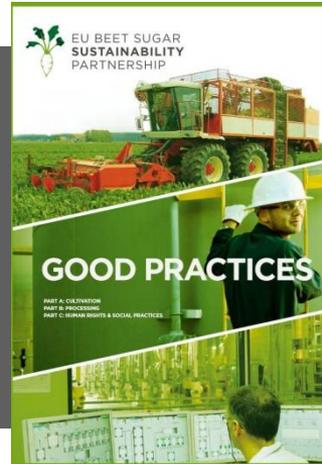
 @SustainSugar



Introduction to sustainability in the sector



A summary of issues and impacts



The report on Good Practices



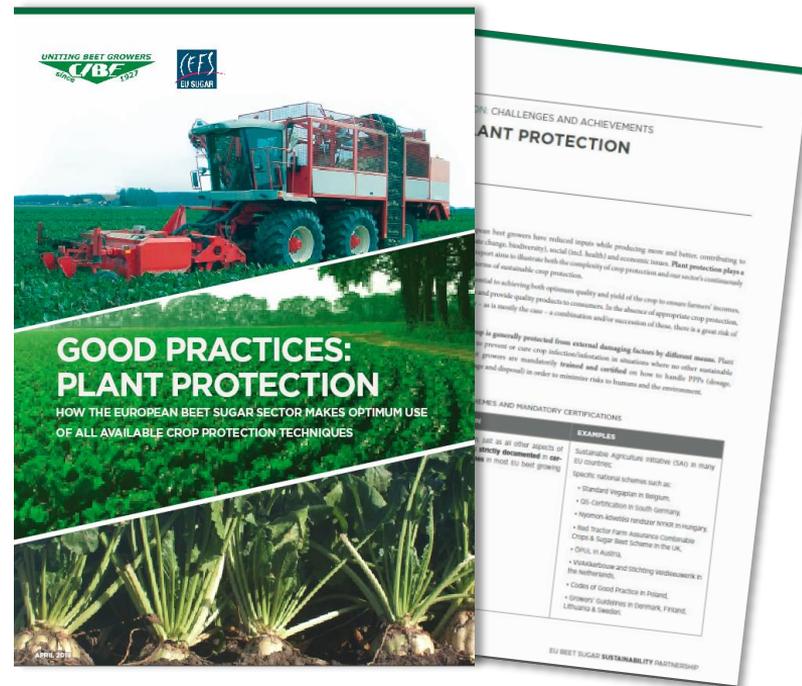
In-depth issue briefs Water, Soil, Climate Change, **Social Dialogue**

# New Report: Good Practices – Plant Protection Products

How the European Beet Sugar sector makes optimum use of all available crop protection techniques

Structure of the report: **Integrated Pest management** at the basis of beet cultivation

1. Sugar Beet: a key rotational crop for which IPM constitutes the basis
2. Using the appropriate sugar beet varieties: a continuing success story
3. The sowing of treated beet seed: a progress in terms of sustainability
4. Weed control: weed stress on beet is permanent for the first part of the crop season – the sooner addressed, the better
5. Post-establishment pest and disease control: monitoring is key
6. The challenges of organic beet cultivation and protection



# New Report: Good Practices – Plant Protection Products

How the European Beet Sugar sector makes optimum use of all available crop protection techniques

Presented at



**Breakfast Cycle**  
Integrated Pest Management & Plant Protection

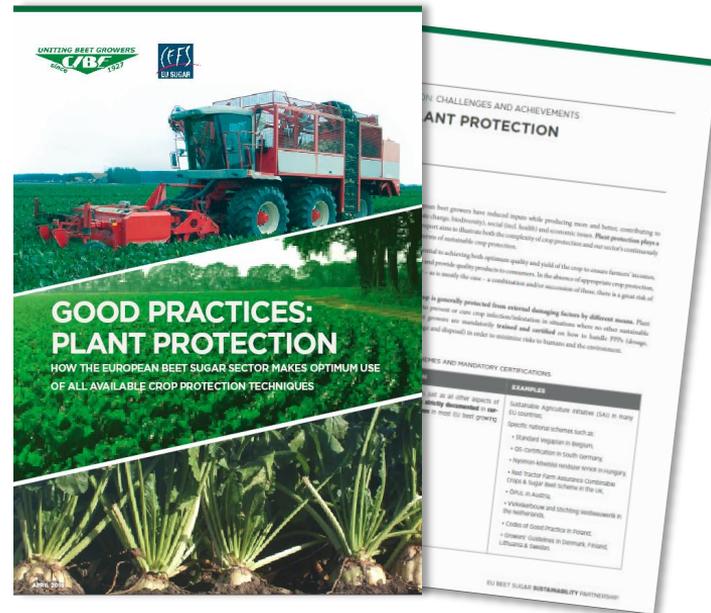
*Good practices and innovative developments to prepare for the ambitious objectives set in the Green Deal and the upcoming Farm-to-Fork Strategy*

*With the patronage of MEP Anne Sander*

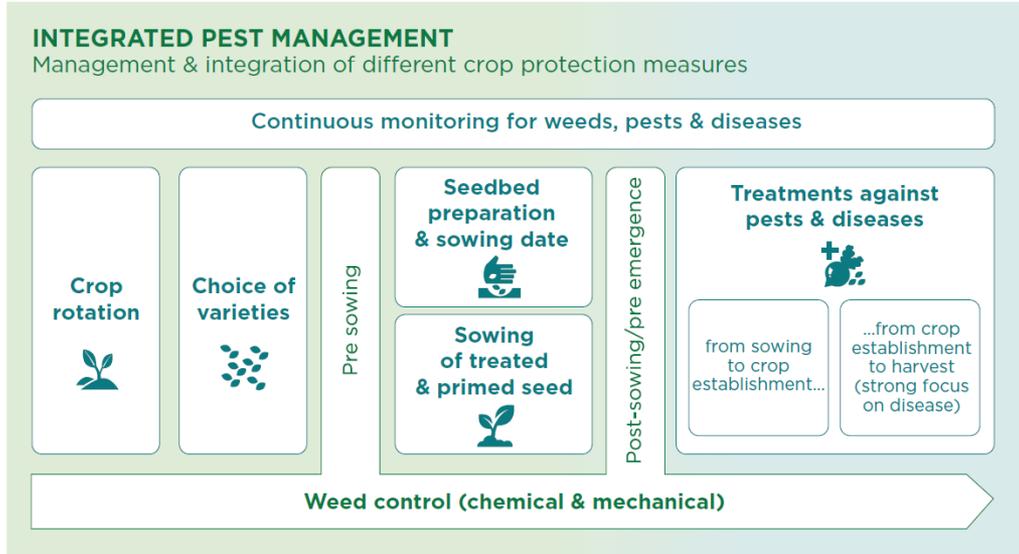


23rd January 2020  
European Parliament Room JAN 6Q1  
8.00-9.00 am  
(Welcome from 7.45 am)

*Please scroll down for the programme and to register*



# 1. IPM in sugar beet – multiple dimensions, diversity of tools



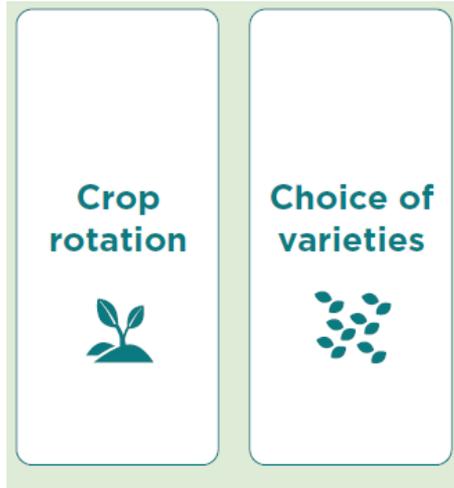
## Integrated Pest Management



A “routine” for Sugar beet growers

# 1. IPM in sugar beet – multiple dimensions, diversity of tools

## Crop rotation & Variety choice (i)

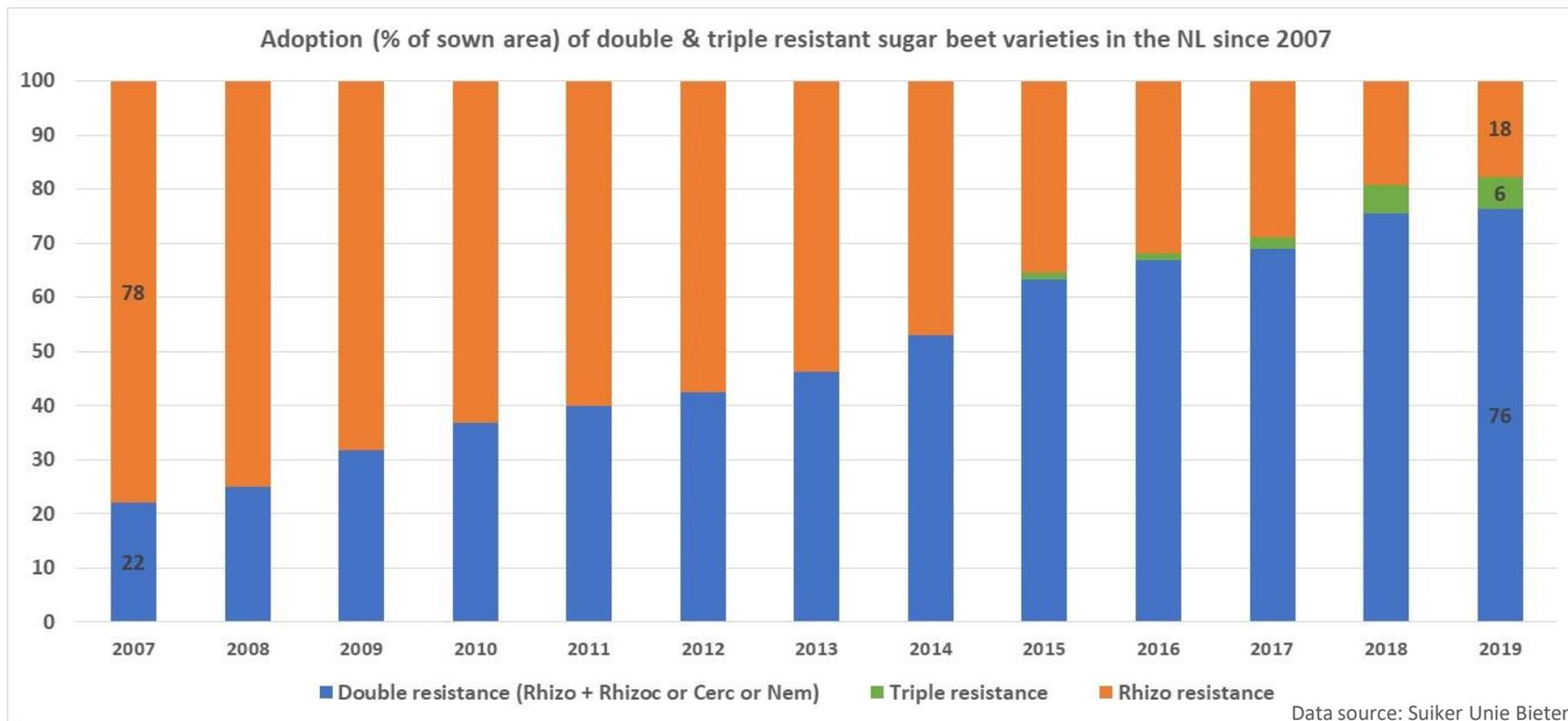


**Non-chemical methods** for prevention and/or suppression of harmful organisms and pest control

- **Systematically grown in rotation with other crops** which helps to **prevent build-up of host-specific pests** and pathogens causing **diseases**
- Resistant/tolerant varieties are **well-established in all beet growing countries of the EU**
- Breeding progress continues, with **double and triple resistant/tolerant varieties** gaining ground (between 30 and 100% of the beet varieties on offer)

# 1. IPM in sugar beet – multiple dimensions, diversity of tools

## Crop rotation & Variety choice (ii)



Data source: Suiker Unie Bietenstatistiek

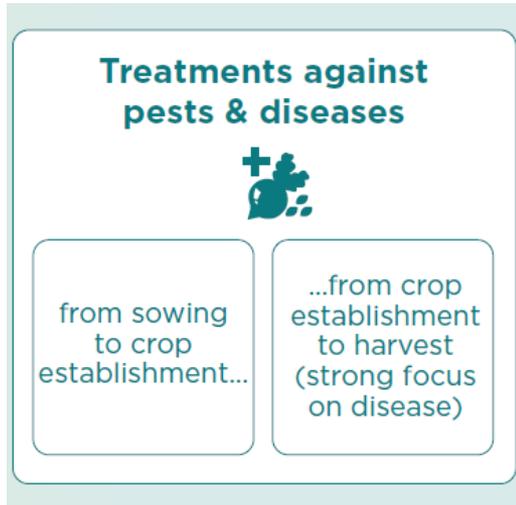
# 1. IPM in sugar beet – multiple dimensions, diversity of tools

## Treated beet seed – an established IPM practice



- Seed treatment, a good plant protection practice because **young beet are highly susceptible to pests & diseases**
- **Treatment** with low doses of fungicide/insecticide:
  - **protects** the young beet **against pests & diseases present** in the field during the first 80-90 days after sowing;
  - **avoids** 2 to 3 (sometimes 4) fungicide/insecticide **applications later on** in the crop season;
  - **limits risks to non-targets (incl. beneficial insects)**, e.g. by reduced doses, by reduced application frequency or partial applications.

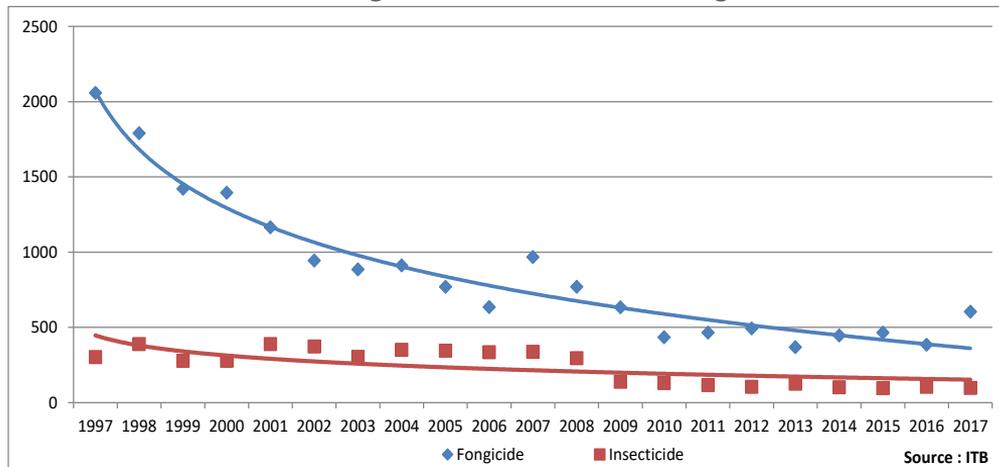
## 2. IPM & Good Practices for reducing insecticide & fungicide use



- Good Practices incl. beet seed treatment & the evolution in active substances have allowed to **reduce the use of fungicides and insecticides**, with relative stability in recent years
- However, **climate change** in major beet regions, with mid winter followed by a warm and dry spring **lead to very early and rapid development of pest populations, migration, build-up and subsequent virus and disease spread**
- The management of crop protection for both conventional and organic beet is a key challenges

## 2. IPM & Good Practices for reducing insecticide & fungicide use

Use of insecticide & fungicide active substance in sugar beet in France



In FR in 20 years:



- 50 % fungicides

- 75 % insecticides

Can we keep this trend going and how?

## 2. Strategies and challenges for further reduction of insecticides & fungicides

Strategies	Challenges
<b>Further improvements for pest and disease monitoring &amp; management</b>	<b>Loss of active substances</b> > increase in FTI & volumes of less efficient active substances <b>Appearance of new pests every year</b> (climate change, beet weevil, beet fly, beet moth, leafhoppers)
<b>More biocontrol</b> (macro- & micro-organisms, semio-chemicals & natural substances) <b>Ongoing development</b> in beet cultivation	<b>Global lack of registered biocontrol substances for sugar beet</b> <b>Only contact effect:</b> timing & repetition of applications crucial
<b>More low-risk active substances</b> (LRAS)	<b>Very few LRAS available</b> < 20 LRAS currently EU approved (10 fungicides, 1 insecticide)
<b>Further development of beet varieties</b> resistant/tolerant to pests & diseases <b>Development of New Breeding Techniques</b> (NBTs)	Breeding needs <b>time and investment</b> <b>Stable and clear EU regulatory framework for NBTs!</b>

## 2. Strategies and challenges for further reduction of insecticides & fungicides: the challenge of new pests



EU BEET SUGAR  
SUSTAINABILITY  
PARTNERSHIP

EU BSSP

- Appearance of new pests in beet cultivation: beet weevil, beet fly, beet moth, leafhoppers... (climate change)



(Source: Jacek Piszczek, PL)

## 2. Strategies and challenges for further reduction of insecticides & fungicides: the challenge of new pests

- Impacts of weevils in Austria:
  - Infestation during the past 3 years
  - Total destruction of young beet field infested within one day
  - 15% to 25% beet area lost

### Development of beet area in ha in Austria Development beet area in hectares

	2018	2019	2020
<b>sowing</b>	40,550	32,500	34,000
<b>losses by weevil</b>	9,300	4,700	7,700
<b>remaining</b>	31,250	27,800	26,300

Source: Die Rübeanbauer, VÖR

## 2. Strategies and challenges for further reduction of insecticides & fungicides: the challenge of a depleting toolbox



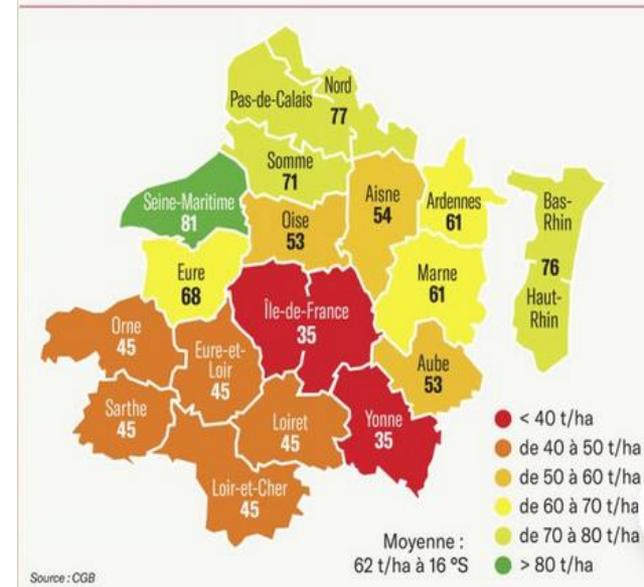
- CIBE monitors closely the renewal/non renewal of a.s. used in beet cultivation
- 22 active substances have been withdrawn from sugar beet growers' toolbox in a very short period of time
- 26 more active substances are coming up for renewal, a big majority are Candidate for substitutions and therefore, are likely to not be renewed
- Without **impact assessments of economic and environmental impacts** and without consideration of **time for adaptation**

## 2. Strategies and challenges for further reduction of insecticides & fungicides: the lessons of 2019/20 & 2020/21 crops & the challenge of technical deadlock

➤ **Agro-technical dead-end**, notably vis-à-vis virus yellows, foliar diseases which can significantly reduce both root yield and sugar content, are mostly carried by green aphids and have caused considerable damage in the 2020 crop year, notably in France and the UK:

- In FR at national level, the loss in yield is estimated at this stage at **at least 25% (!) on average and around 40% of French growers are experiencing 40% losses (some 80%!)**, but the situation may get even worse while the beet campaign is ongoing;
- In the UK at national level, combined with other factors, the loss in yield is estimated at this stage around 15% on average, but the final figure will only be known early 2021;
- In other countries, the loss in yield in most affected fields is also expected at around 30-40% and the loss in yield at national level is currently being assessed

Rendements estimés des betteraves réceptionnées au 25 octobre



## 2. Strategies and challenges for further reduction of insecticides & fungicides: the lessons of 2019/20 & 2020/21 crops & the challenge of technical deadlock

- The so-called alternatives (ex. flonicamid, spirotetramat and pirimicarb) clearly showed their limitations in 2020:
  - several tools in the beet growers' toolbox are of lower quality/effectiveness and are in fact only there to more or less try to replace the effective tools which have been lost, their use together with mitigation strategies did not allow at all to control infestation and damage,
  - they have **higher costs** (€50- €135/ha depending on the number of foliar applications)
- 11 MSs have granted Emergency Authorisations for neonic seed treatment for 2020 crop, most of them under strict conditions
- The Commission has mandated EFSA on 26 October 2020 for Technical assistance to assess the emergency authorisations granted by MSs for the use of neonics (clothianidin, imidacloprid, thiamethoxam and/or thiacloprid) in sugar beet for the 2020 growing season

## 2. Strategies and challenges for further reduction of insecticides & fungicides: the lessons of 2019/20 & 2020/21 crops & the challenge of technical deadlock



- CIBE technical Committee is monitoring closely these developments
- Losses of 2 or 3 tonnes of sugar per hectare (i.e. around 15-20%) represent a turnover loss of around €1000/ha, losses of 4 or 5 tonnes per hectare (i.e. around 40%) represent a turnover of around €1700/ha (at current average sugar price of €379/t)
- 35% of FR growers have a beet income cut by 2 in 2020/21
- In combination with the higher costs linked to foliar applications and the higher fixed costs for sugar manufacturers linked to a shorter processing campaign, this means that **hundreds of millions of Euros have are being lost this year by the beet sugar sector**

## 2. Strategies and challenges for further reduction of insecticides & fungicides: the need for innovation



- Research programmes are ongoing at national level, focusing on: alternative solutions (incl. biocontrol), new tolerant sugar beet varieties and beneficial insects. However, results are only expected in **several years**. Furthermore, experts state that there will be **no single alternative solution to the ban of neonics and other active substances, but a combination of various solutions** and integrated pest management must further be implemented with new agronomic practices, possible new plant protection products – both chemical and biological (use of beneficial insects) -, and new varieties with several resistance/tolerance characteristics.
- NIKIZ project in Rheinland-Pflaz supported by EIP-AGRI
- **A large EU specific research programme** with ambitious funding from Horizon Europe is badly needed to support, boost and coordinate all the efforts made by the sector and the beet institutes to design the appropriate technical itineraries which will allow the sugar beet sector to face the multiple ambitious challenges and to further improve its sustainability.

### 3. IPM & Good Practices for Weed Control - strategies and challenges for further reduction of herbicides

Strategies	Challenges
<p><b>Increase the number of crops</b> in the rotation</p>	<p><b>Uncertainty:</b> will this reduce weed pressure or actually increase it?</p>
<p><b>Alternating</b> spring &amp; autumn-sown crops</p>	
<p><b>Soil tillage</b> - Ploughing</p>	<p>Possible impact on soil structure &amp; biodiversity Incompatible with conservation agriculture</p>
<p><b>Stale (false) seedbed</b></p>	<p>Dependent on favourable weather conditions Increases <b>risk of delayed sowing</b></p>
<p><b>Varied herbicide strategy to avoid resistance</b></p>	<p>Reduction of individual herbicides, not overall herbicide use</p>
<p><b>Mechanical weed control</b> between the rows Ongoing development since 2009</p>	<p>Dependent on specific weather conditions Increased risk of erosion &amp; <b>crop damage</b> No solution for weeds in the row</p>
<p><b>Combined mechanical/chemical weed control</b></p>	<p>Necessitates substantial <b>investments and costs</b></p>

### 3. IPM & Good Practices for Weed Control - strategies and challenges for further reduction of herbicides

Strategies	Challenges
<p data-bbox="73 303 523 339"><b>Trailed manual weed control</b></p> <p data-bbox="73 440 330 476"><b>Weeding robots</b> Computer-assisted mechanical &amp; robotic weed control</p>	<p data-bbox="633 303 1342 383">Extremely challenging, burdensome &amp; costly Currently limited to cultivation of organic beet</p> <p data-bbox="633 440 1238 656">In early stage of development <b>Investment</b> costs Necessitate development of broadband covered areas with latest wireless technology</p>



### 3. IPM & Good Practices for Weed Control

What about combining chemical & mechanical & robotic weed control:



In FR in 20 years:



> 33% sugar beet area  
with combined  
mechanical / chemical  
weeding

Sources: ITB-P.Montigny & Nordic Sugar-B.Secher

## 5. Ambition – Innovation - Realism

The beet sugar sector reduced use of plant protection products and has been working in this direction for years by investing substantially in the development of innovative techniques and tools

But

The question is HOW AND AT WHAT REALISTIC PACE

we should reduce further ?



Strong support to R&D

Unequivocal support of innovative techniques, such as NBTs, is a *condition sine qua non*



Appropriate timing

Reducing the crop protection toolbox too quickly and too dogmatically will leave farmers unarmed against naturally occurring threats & jeopardize the sustainability of the sector

# Thank you for your attention!



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