



Fascination of  
Plants Day  
2024

**ILVO**

Flanders research institute for  
agriculture, fisheries and food



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Plants  
for the Future  
European Technology Platform

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# Case examples of the benefits of public-private partnerships

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## Case 1: Soybean: from public breeding to spin-off company



- Europe is over 70% dependent on import for its supply of protein-rich crops.
- Soybean varieties available are not typically adapted to our local soil and climate
- Soybean is an excellent source of protein and can be grown sustainably with minimal nitrogen fertilization.
- Growing consumer demand for sustainable, local and more high-quality plant-based protein



## Soybean breeding @ILVO



- Started in 2010 on request of Flemish Government
- Screening of genetic resources
- Breeding goals: focus on local use
- Use of high throughput screening methods, marker assisted selection, crop models and speed breeding
- Research on management practices
- Interaction soybean and Rhizobium bacteria



# Protealis

- Founded in April 2021
- Spin-off of the VIB (Flemish Biotech Institute) and ILVO (Institute of Agricultural, Fisheries and Food Research)
- Innovative breeding technologies and proprietary seed coatings





## Case 2: Industrial chicory: from public breeding to R&D partner



- INULIN = prebiotic dietary fibre:
  - stimulation of the good bacteria
  - optimal intestinal function
  - increased calcium absorption
- Sugar and fat replacer
- Non food (cosmetics)



## Breeding @ILVO

- Started in 1990
- Focus
  - Inuline yield
  - Fiber length
  - Bolt resistance
  - Disease resistance
- Commercialisation via industrial partner



chicoline™



## Recent years: ILVO R&D partner for Chicoline



- Hybrid breeding: possible yield increase of 20%;
- Need for male sterility, double haploids
- Use of drones for phenotyping
- Introduction of molecular technology in breeding and selection



## Case 3: Hop: participatory breeding in a small crop



- Belgian hop production: 184 ha
- Belgian beer culture
- Farmers and breweries:
  - Need for disease resistant and drought tolerant aroma varieties
  - Need for changes in flavors for the beers
  - Buy locally produced varieties
  - Common interest to develop regional Belgian hop varieties



# Participatory breeding

- Research institutes



- Growers





# Breeding flow



- 10 years
- 10.000 seedlings for 1 variety



Disease tests



First field evaluation



Testing candidate variety





# Brewing technical evaluation

- Biochemical analyses
- Sensory hop profiling
- Test brewing







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# Thank you!



Instituut voor Landbouw-,  
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