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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







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













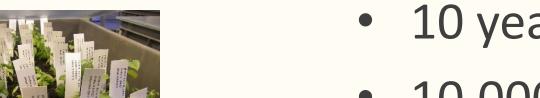
Breeding flow

vives hogeschool









- 10 years
- 10.000 seedlings for 1 variety





















Brewing technical evaluation

- Biochemical analyses
- Sensory hop profiling
- Test brewing











Thank you!

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