



The project has received funding from the Horizon 2020 research and innovation programme under the Grant Agreement N°101000383

Webinar: Lupins – a neglected, underused crop

Overview of lupin crops How much do the consumers know lupins?

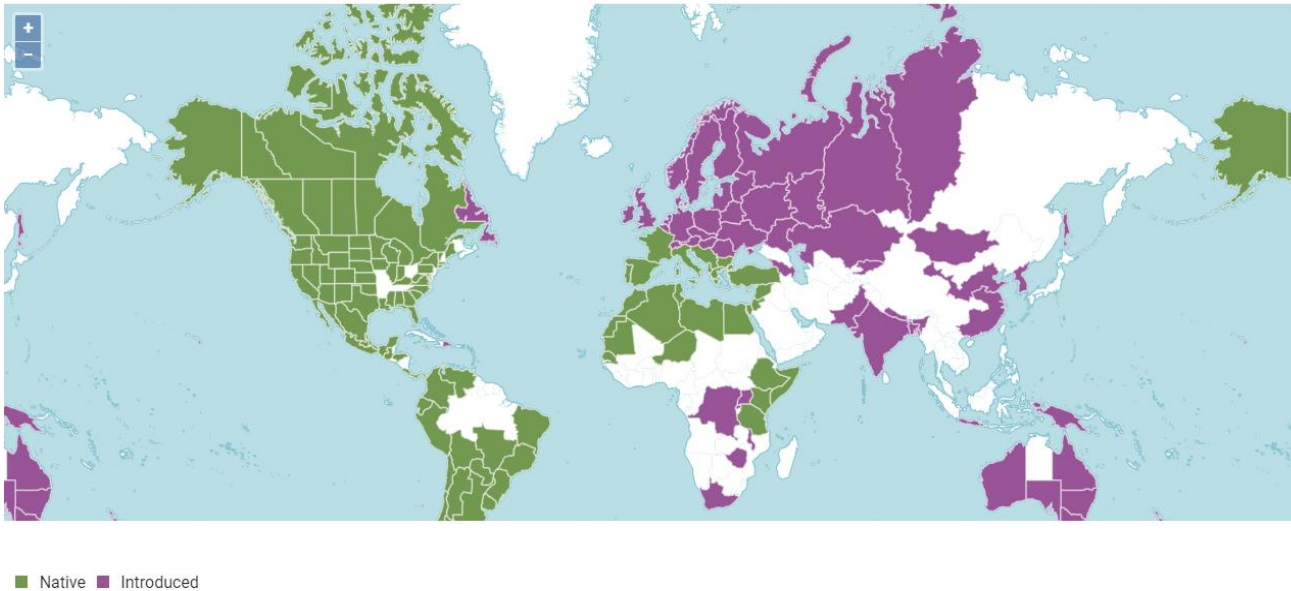
Mariateresa Lazzaro and Christine Arncken,
Plant Breeding, FiBL (Switzerland)



Lupins (*Lupinus spp*)

- large and diverse genus in the legume family
- includes 583 accepted species
- Lupins are widespread across various climatic zones.

ability to adapt to different environments and varied agroclimatic conditions



Lupinus arboreus – tree lupin

- Lupin species are annual and perennial herbaceous plants, but also shrubs and trees.

Lupin species

Wild-type and landraces= high-alkaloid content
Modern varieties «sweet lupins» = low-alkaloid content



White lupin
(L. albus)



Narrow-leaved lupin
(L. angustifolius)



Yellow lupin
(L. luteus)



Andean lupin
(L. mutabilis)

Cultivated,
annual,
arable

Cultivated,
perennial,
ornamental



Lupinus* × *russellii
Russel's hybrids



Lupinus polyphyllus
Garden lupin

*classified as
invasive species
in several
countries in
Europe

Perennial,
invasive
neophyte
(e.g. Iceland)



Lupinus nootkatensis
Nootka lupin



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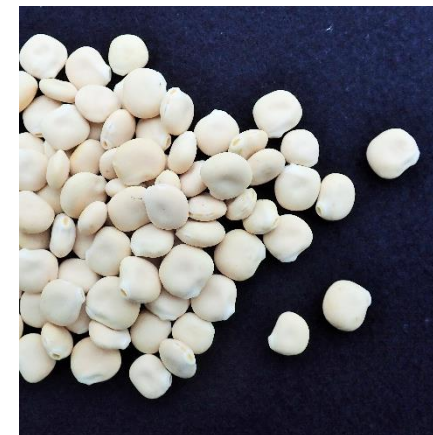


Narrow-leaved («blue») lupin



Photos: Christine Arncken (FiBL)

White lupin



Photos: Christine Arncken (FiBL)

Lupin: a chance for sustainable agriculture

- Legume family → N fixation
- P mobilization (cluster roots)
- Deep roots → Soil structure improvement
- frost tolerant summer crop
- drought tolerant
- Pollinator attracting flowers (pollen, no nectar)

Particularly interesting for organic or agroecological farming systems



- **What do we do at FiBL?**

Developing new varieties of white lupin

Breeding targets:

- increased resistance to anthracnose

- low alkaloid content**

- ...**bitter taste/toxic...**

- early ripening



- **Why?**

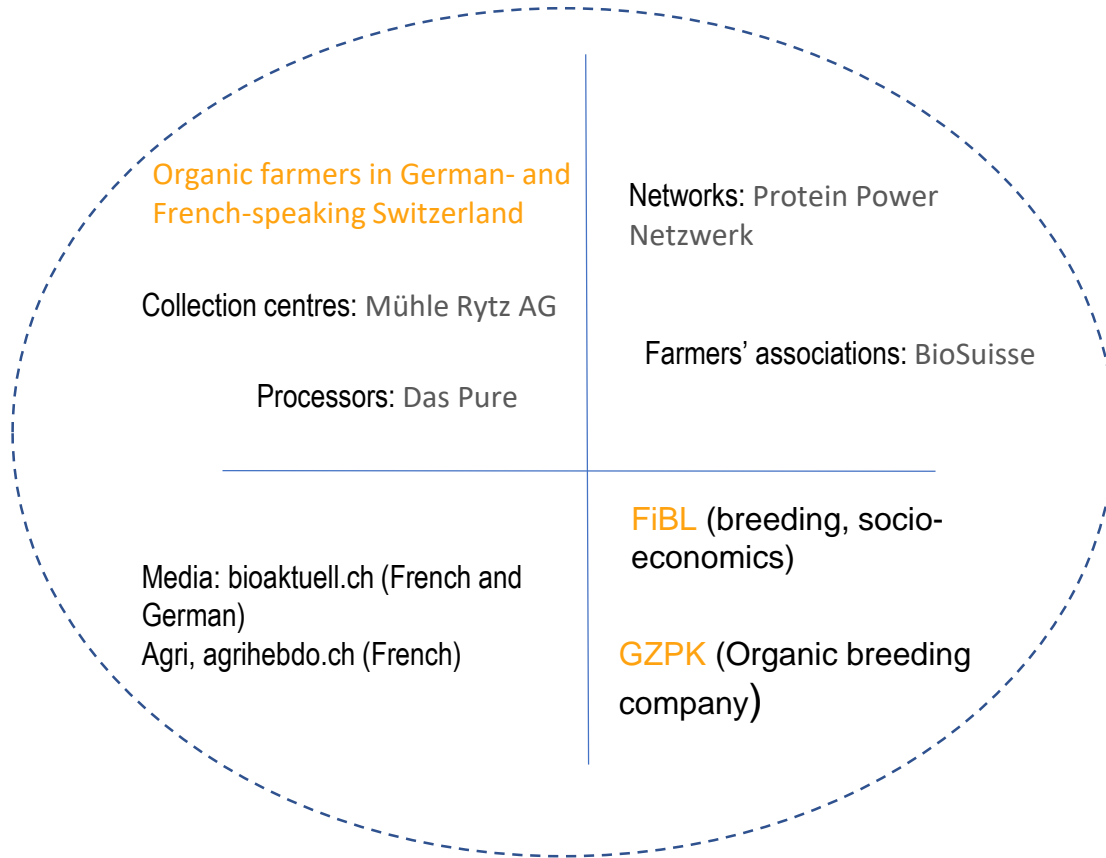
- Only 2 varieties with increased tolerance to anthracnose in Swiss conditions (Frieda, Celina)

- No white lupin variety with stable alkaloid content below limit for human consumption



Field scoring at FiBL white lupin breeding nursery, June 2022 (Photo: Mariateresa Lazzaro)

The LivingLab approach



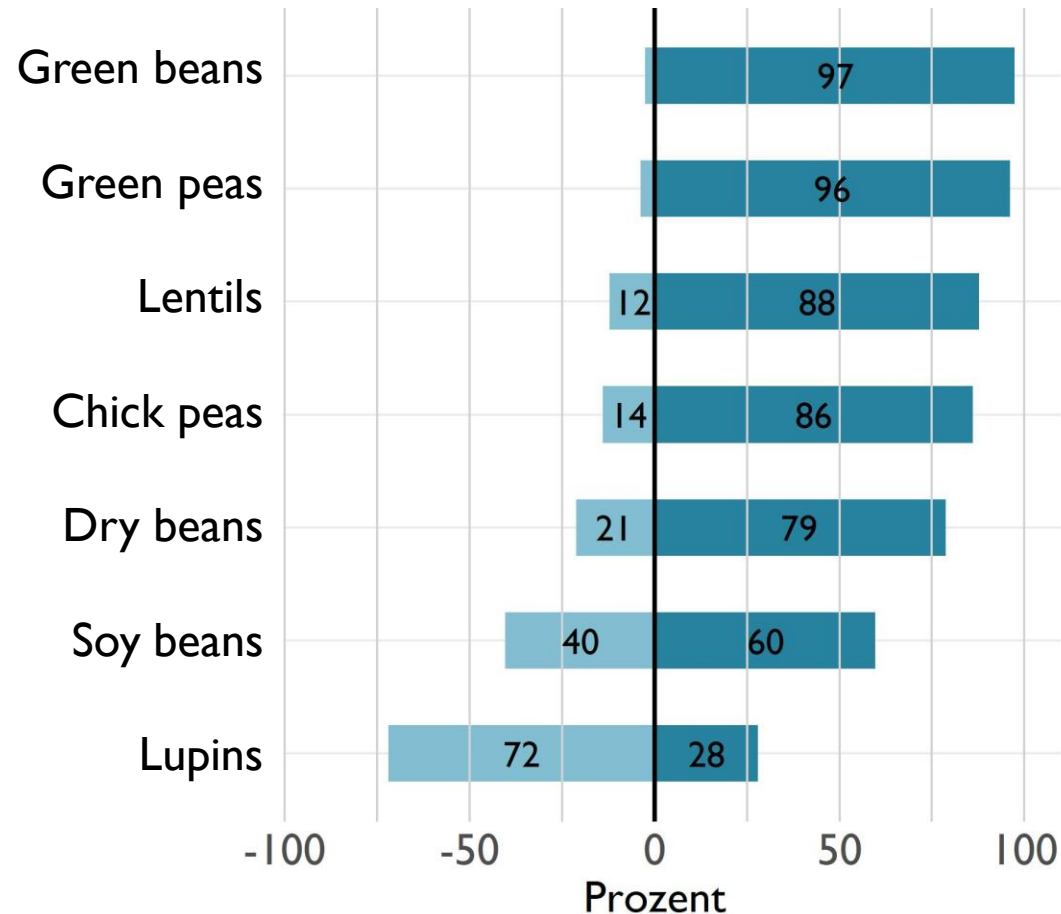
Value-chain development



How much are lupins known among the consumers?

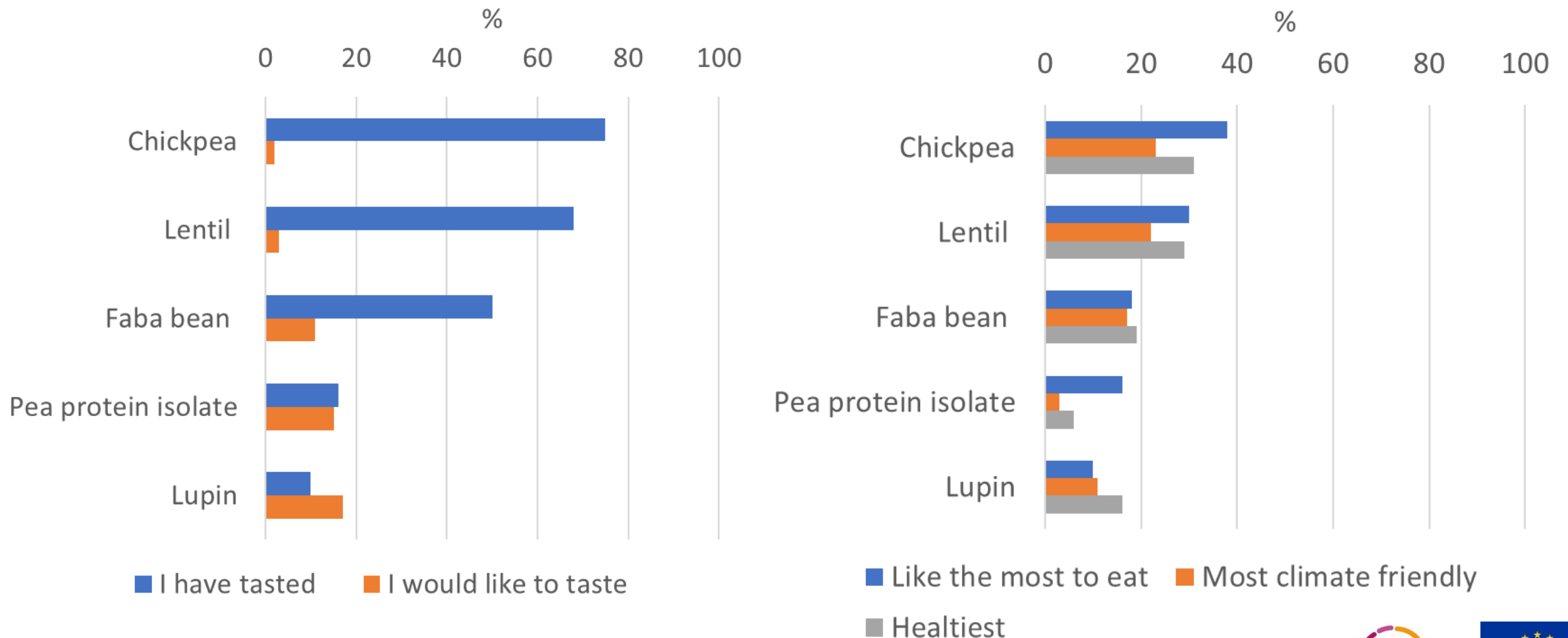
Consumer research – consumption of lupins and other legumes

28% of the Swiss population has consumed lupins – about twice as many have consumed soy beans.



- Representative consumer survey with adult population in German and French speaking Switzerland.
- Year: 2022
- Sample size: 500 people

Consumers research – sources of protein, Denmark.



Kilde: Norstat for Landbrug & Fødevarer maj 2022. Gennemsnit n=1.005.

<https://lf.dk/tal-og-analyser/forbrugere-og-trends/gron-omstilling/skub-p%C3%A5-de-klimavenlige-planteproteiner>

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