

Boosting legume breeding in Switzerland

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1 Motivation & Method

- ❖ Increasing vegan protein demand
- ❖ Too little legume production in Switzerland
- ❖ Adapted varieties missing

- Evaluate potential of grain legumes
- Interviews & survey with experts

- Deeper understanding of protein development of peas
- Apply novel technologies to speed up breeding process i.e., detecting flowers on images

- Find pea varieties adapted to our environment
- Planned in 2023: field experiment with ca.100 varieties

2 Results

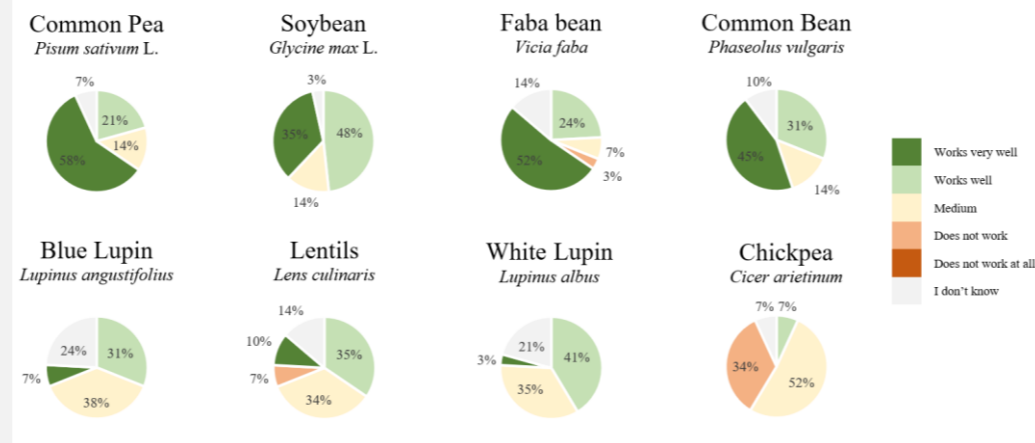


Figure 1: Expert assessment of different legumes regarding their suitability for cultivation in Switzerland

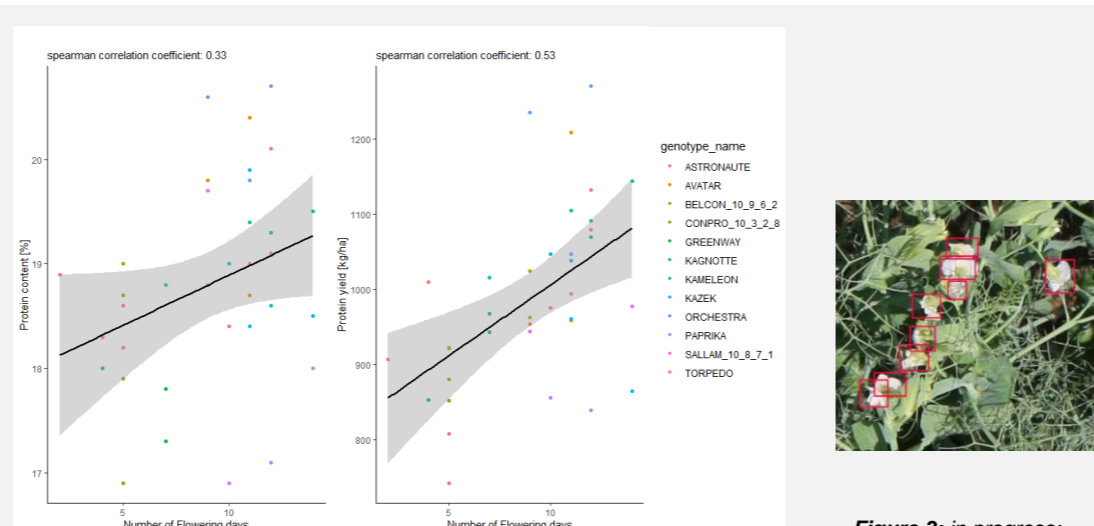


Figure 2: Preliminary result 2022: Number of flowering days could have an influence on protein yield



Figure 3: in progress: detecting flowers on images with machine learning

3 Conclusion

- Peas have high potential for cultivation in Switzerland.
- By using modern technologies, breeding can be supported and optimized.
- Possible relation between time of flowering and protein content.

4 Contribution to Sustainable Food Systems

- ❖ Boost local legume production
- ❖ Peas can fix atmospheric nitrogen and do not need additional N-fertilizer
- ❖ Fulfilling SDG Goal #2 (sustainable agriculture)
- ❖ Peas are part of a healthy diet

