Hybrid fractionation process for Faba bean protein extraction: Effect of combining dry and wet extraction steps* on anti-nutritional factors (ANF)

Avec le soutien de la Wallonie

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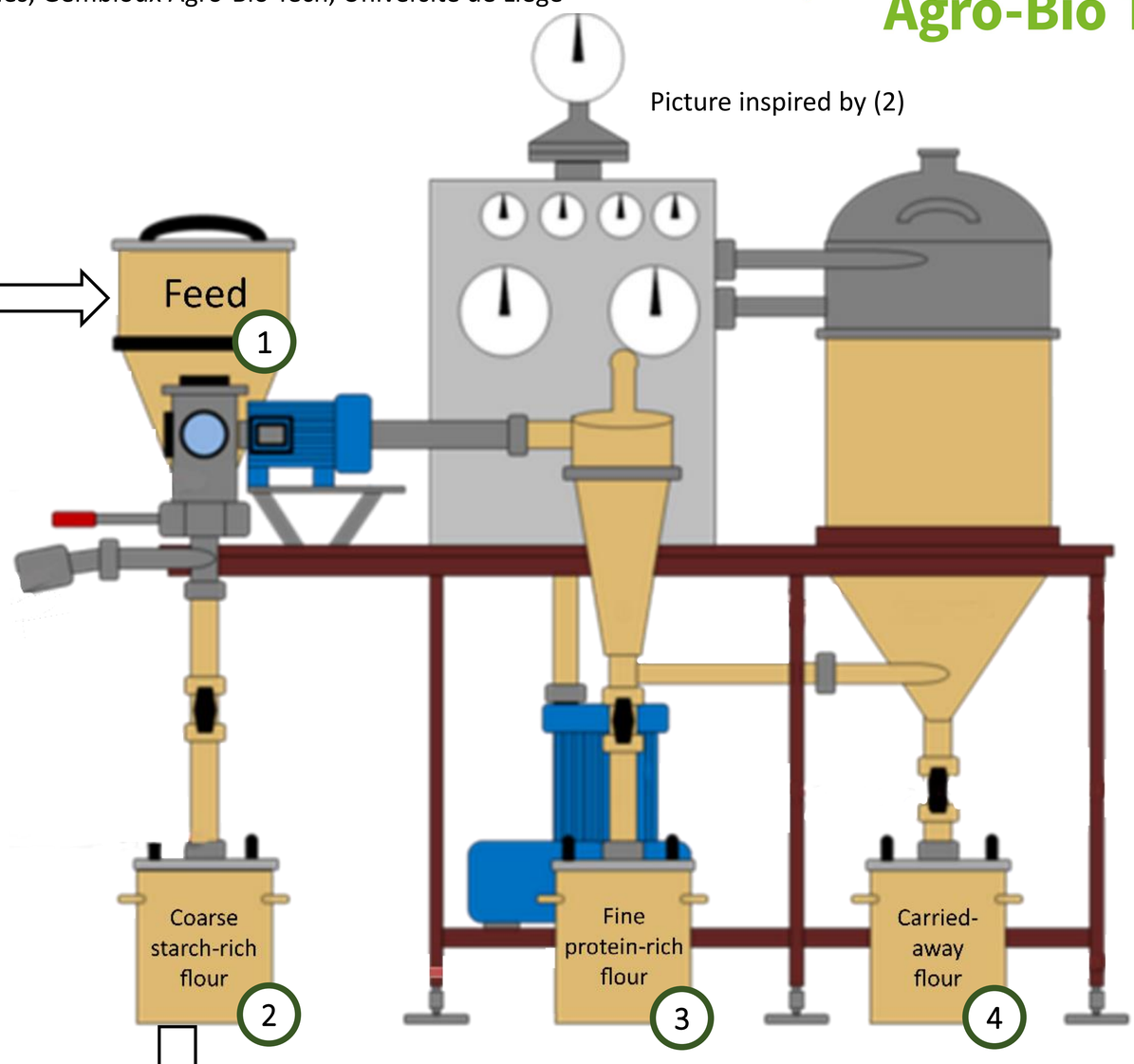
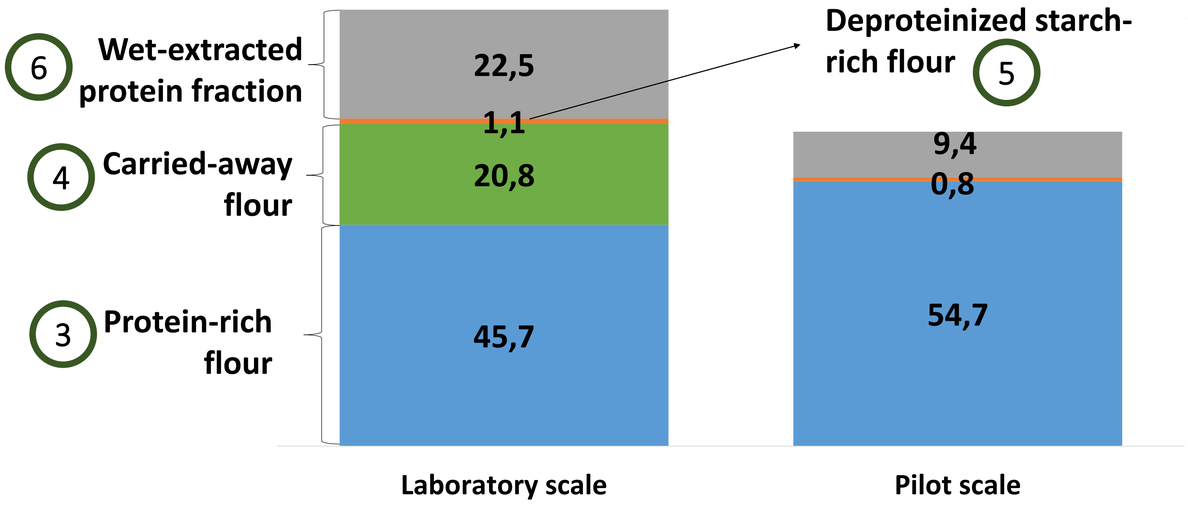
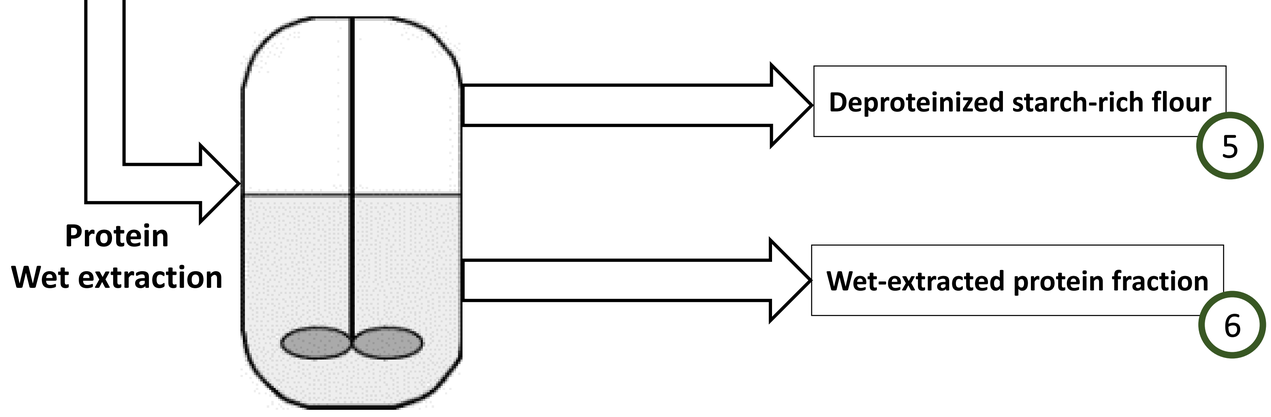
Dehulling + micronisation

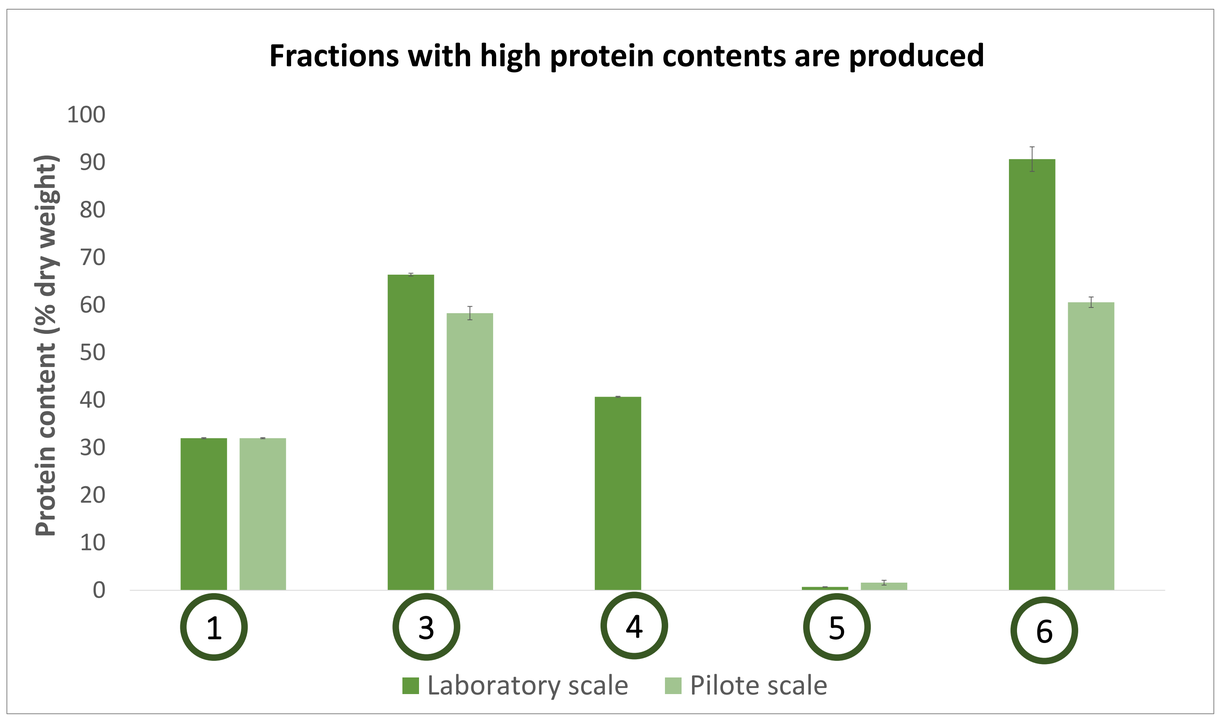
Picture inspired by (2)

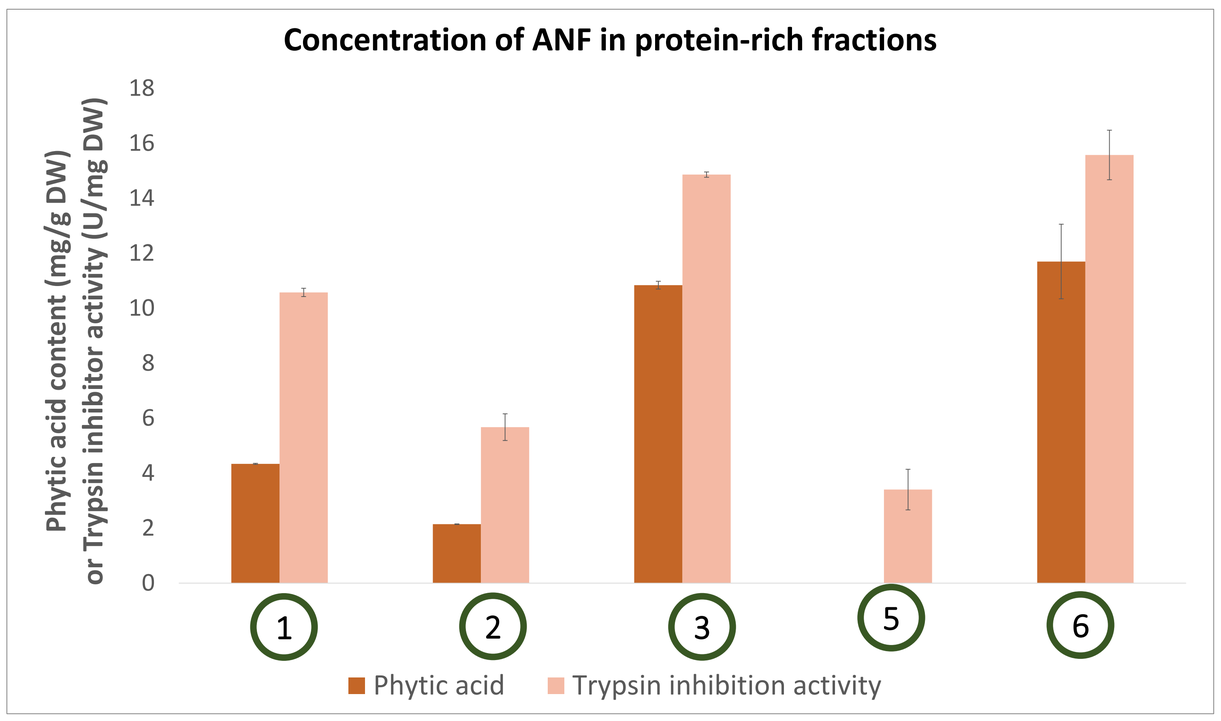


90% proteins were recovered in fractions of interest









Conclusion

- Increased PRY of the protein-rich flour at pilot scale, increased total PRY compared to traditional one-step fractionation process
- Decrease of water and energy consumption
- Disadvantageous repartition of the anti-nutritional factors
- Need to investigate the ANF recommendations/limitations, in regards of other nutritional values (Fe, Ca and Zn contents, amino acid profile, digestibility, …)

*from a research paper submitted to LWT – Food science and technology

References: (1) Assatory A, Vitelli M, Rajabzadeh AR, Legge RL (2019) Dry fractionation methods for plant protein, starch and fiber enrichment: A review. Trends Food Sci Technol 86:340–351. https://doi.org/10.1016/j.tifs.2019.02.006 (2) Spötter C, Legenhausen K, Weber AP (2018) Separation Characteristics of a Deflector Wheel Classifier in Stationary Conditions and at High Loadings: New Insights by Flow Visualization. KONA Powder Part J 35:172–185. https://doi.org/10.14356/kona.2018003

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