

Nutritional characterization of *Lupinus angustifolius* flour and protein isolate as sustainable plant-based ingredients for sports supplements

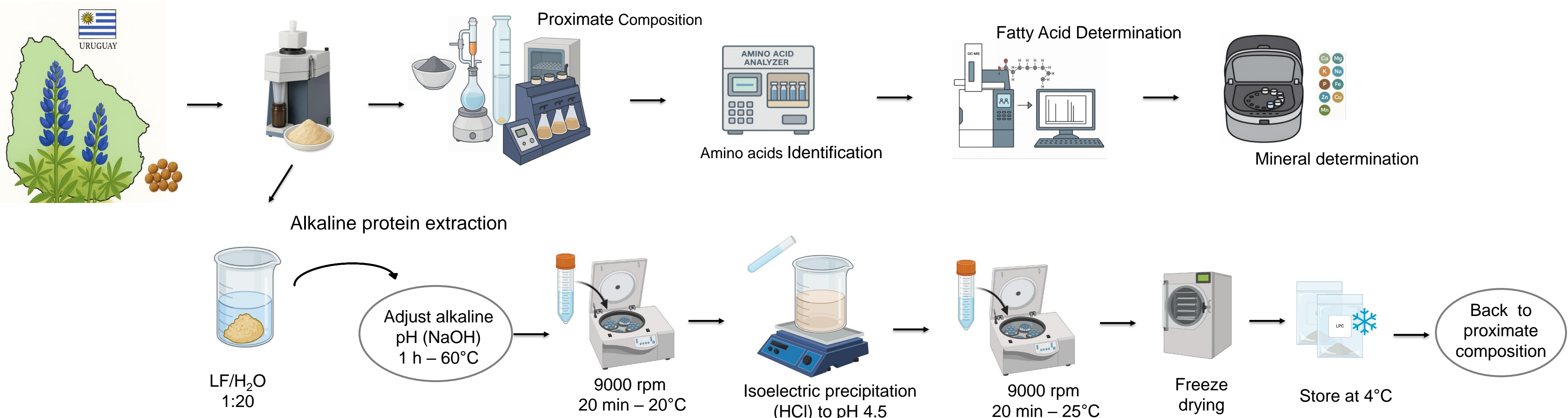
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INTRODUCTION & AIM

The Uruguayan agricultural system seeks profitable and sustainable crops, among which *Lupinus angustifolius* shows remarkable adaptability. Although its current use in the country is mainly restricted to animal feed, the growing demand for sports supplements based on innovative, protein-dense plant ingredients positions this species as a promising alternative. This study aimed to characterize the flour (LF) and protein isolate (LPI) from *Lupinus angustifolius* seeds to assess their potential in sports supplements.

METHOD



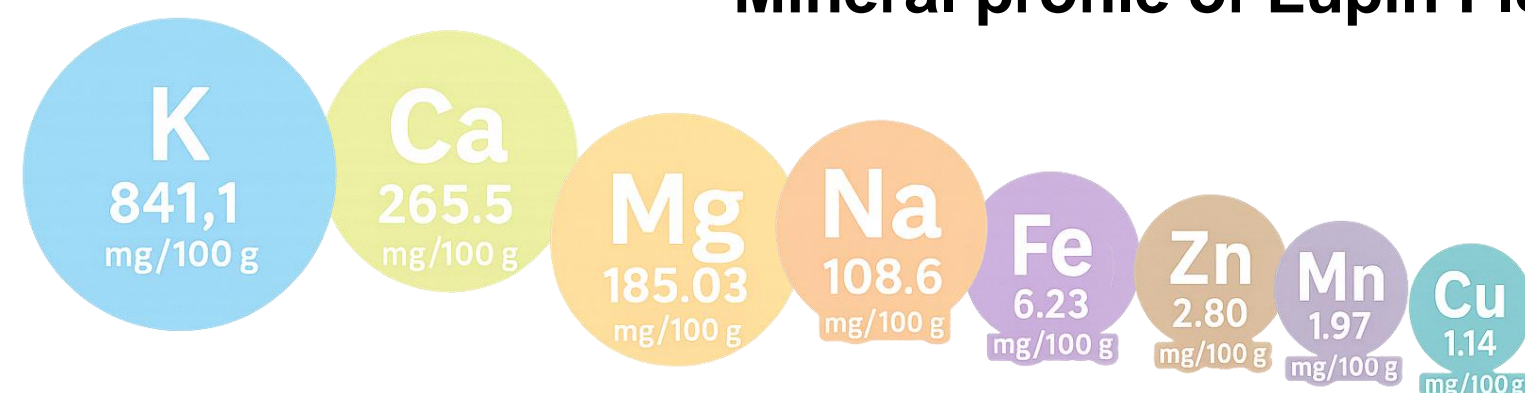
RESULTS & DISCUSSION

Proximate composition of LF and LPI .

Composition (% db)	LF	LPI
Protein	35.1 ± 0.3	85.2 ± 1.6
Fat	7.4 ± 0.2	3.7 ± 0.0
Ash	3.5 ± 0.1	3.3 ± 0.0
Dietary fiber	42.3 ± 0.7	6.4 ± 0.3
Non-dietary fiber. Carbs	11.7	1.4

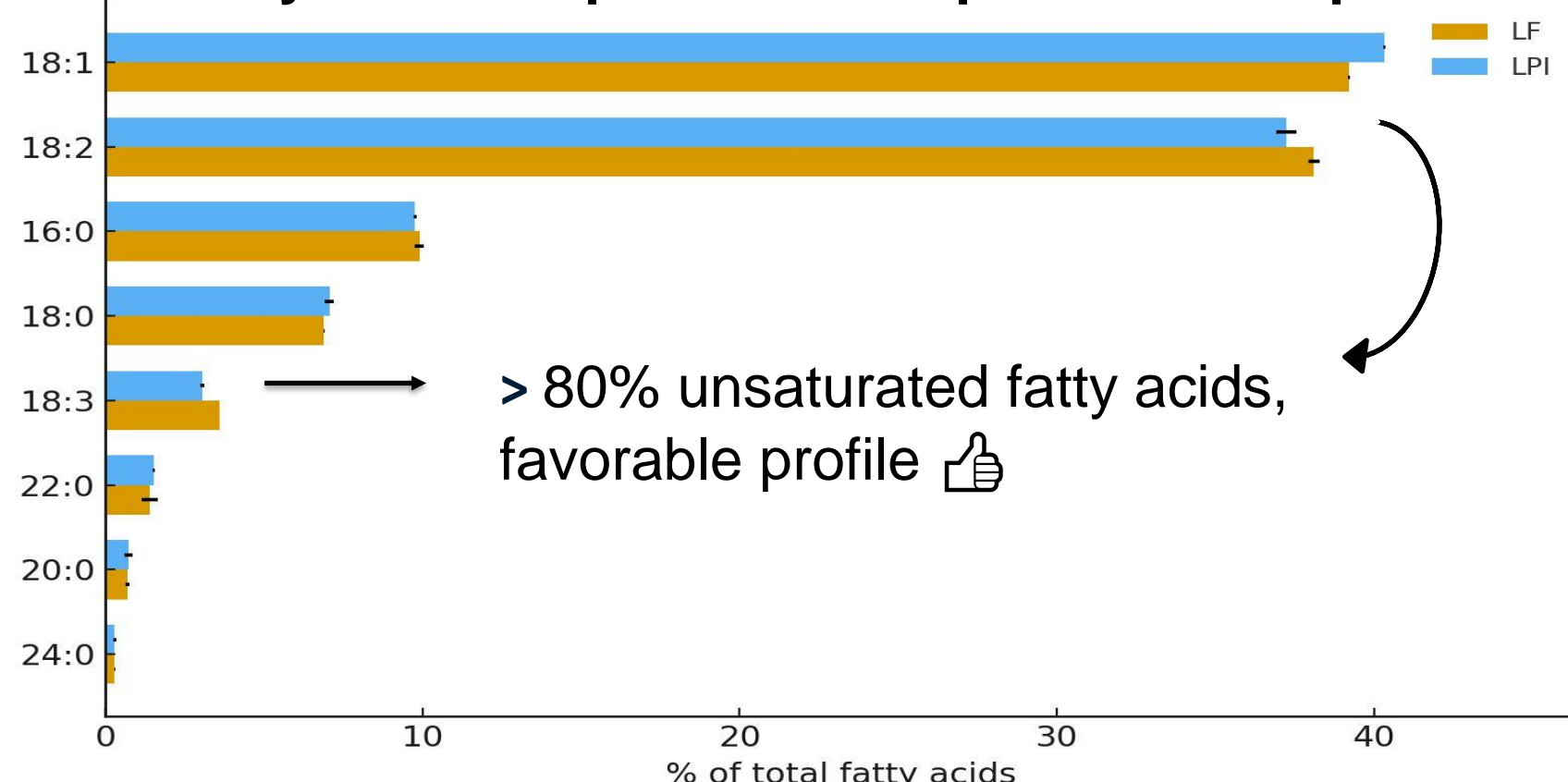
Note: Data is expressed as mean ± standard deviation (n = 3). Abbreviation: LF, lupin flour; LPI, lupin protein isolate.

Mineral profile of Lupin Flour

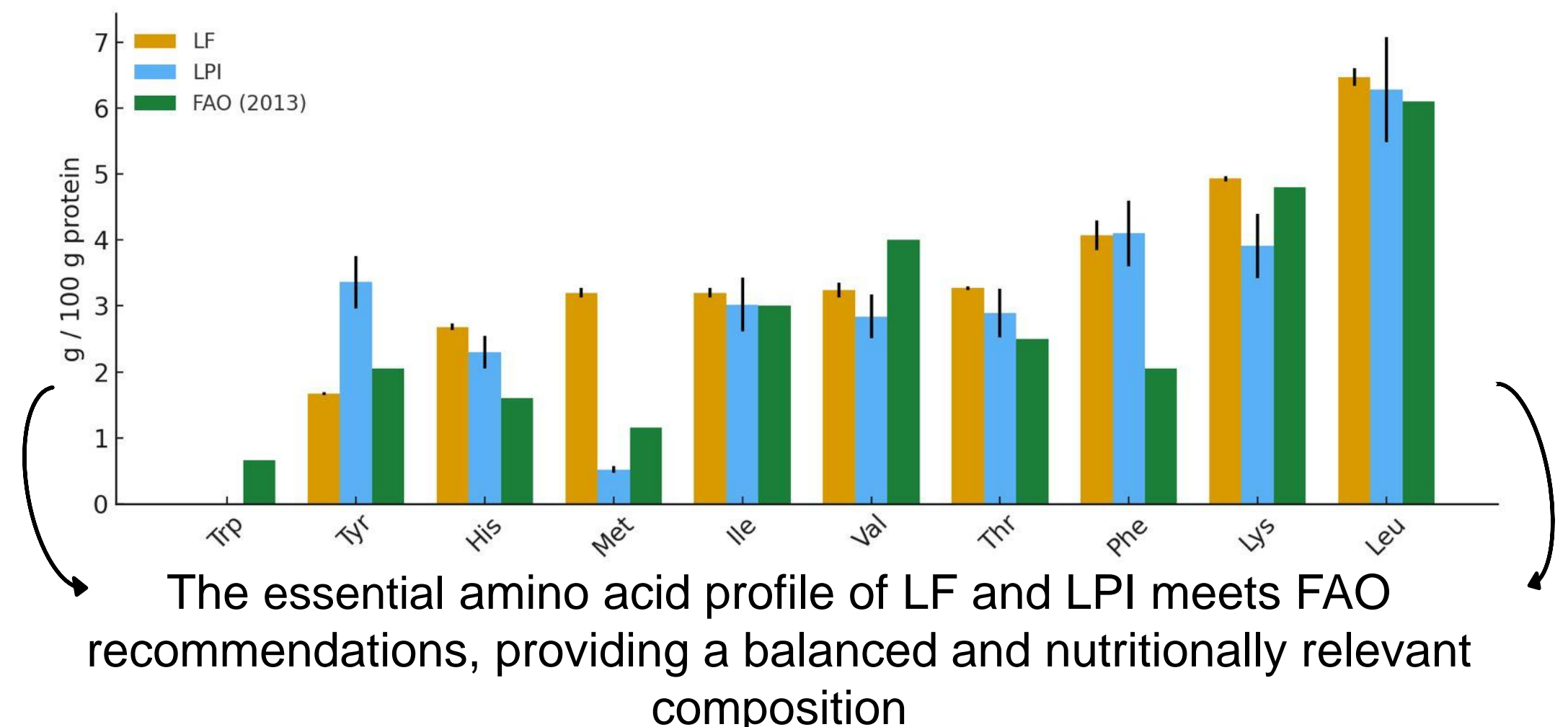


Rich in K, Ca, Mg, Fe and Zn for sports nutrition.

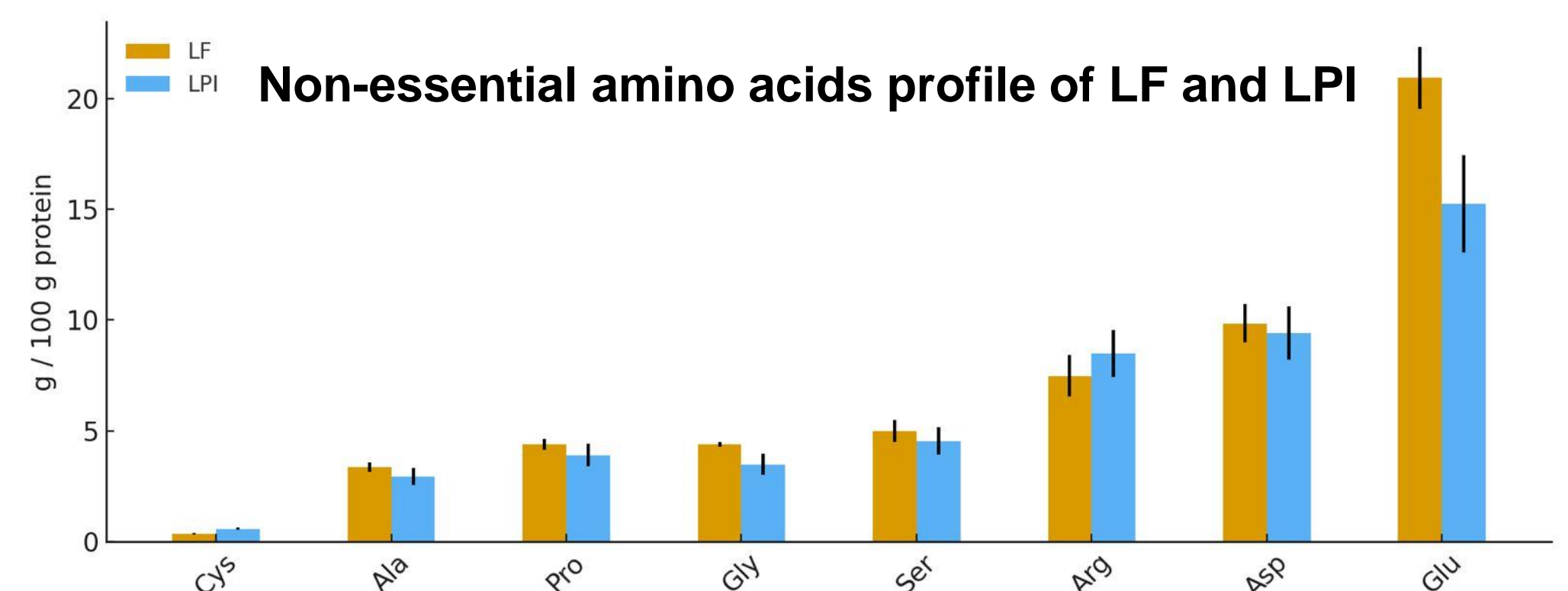
Fatty acid composition of lupin flour and protein isolate



Amino acid profile of LF and LPI relative to FAO reference value



Non-essential amino acids profile of LF and LPI



CONCLUSION

LF and LPI are high-quality, BCAA-rich plant proteins with strong potential for sustainable sports nutrition. Future work will assess functionality and develop prototype formulations.

REFERENCES

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