

# Functional, thermal, and digestive properties of cereal and leguminous proteins from ten crop varieties

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**Abstract:** **【Objective】** Protein, next only to starch, is the second-biggest food component that plays a vital role in food structures and properties. Compared with the animal protein, plant protein gets more popular for its lower production cost, higher availability and environment friendliness. However, owing the disadvantages of low solubility, low digestibility and poor elevated temperature resistance, the utilization of plant protein is still insufficient. In view of this, it is necessary to have a deep and comprehensive research on the properties of plant protein. **【Method】** This paper studied the functional, thermal and digestive properties of 10 types of crop proteins, isolated by isoelectric precipitation. What's more, it conducted the factor analysis and correlation analysis to demonstrate respectively the weights and relevancy of various properties. **【Result】** It was found that for cereal protein, it had higher water and fat holding capacity (1.05 g/g-2.10 g/g, 2.82 g/g-4.86 g/g), while leguminous protein kept protein content (24.02%-46.74%), peak temperature (79.77°C-88.59°C), solubility (27.71%-82.03%), FC (16.44%-32.86%), EAI (42.81%-48.64%), and digestibility (50.56%-89.95%) in a high level. **【Conclusion】** Thereby, crop proteins possessed excellent properties which could be promising material for extensive application in food industry.

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Acknowledgements: National Natural Science Foundation of China (31671631)  
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