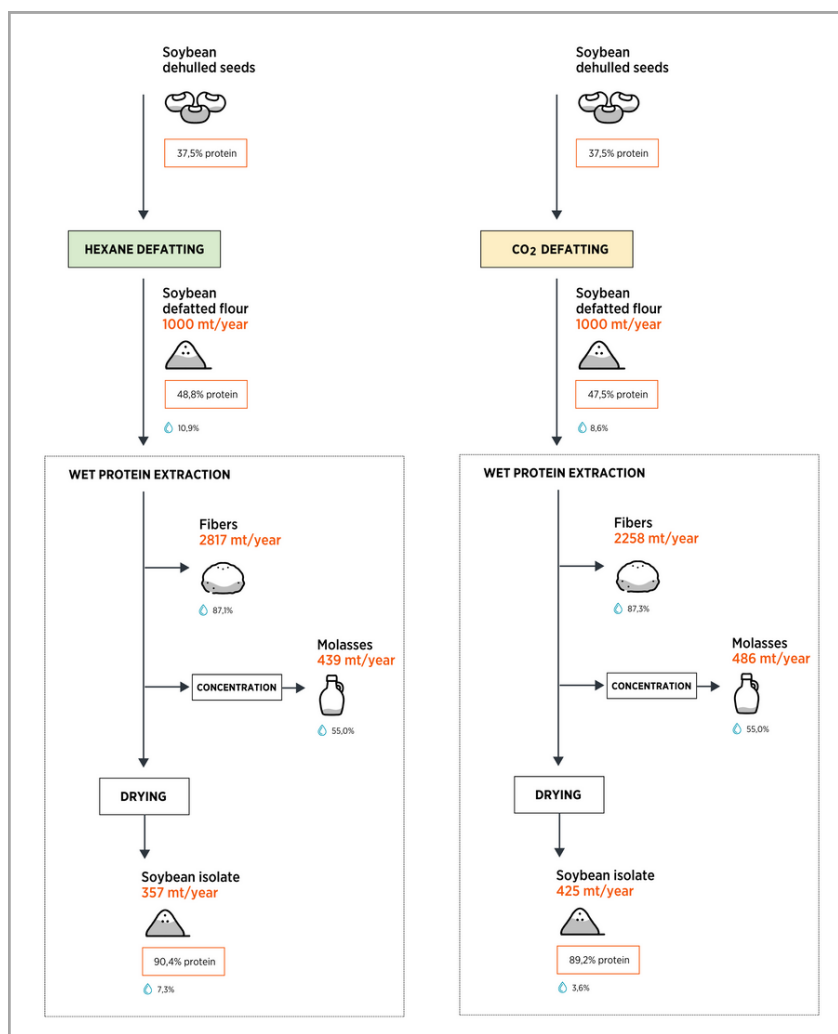


Comparing Quality and Functional Properties of Protein Isolates from Soybean Cakes: Effect of De-Oiling Technologies

This publication is the result of the collaboration between **Cereal Docks** and the **Free University of Bozen** within the call for proposals for **"Renewable proteins from oilseed processing co-products"** funded by the **Cariverona Foundation**. The study aims to evaluate the **efficiency of supercritical fluid extraction (SFE)** as an alternative method for extracting oil from soy beans and obtaining protein isolates.

Using SFE for oil extraction resulted in a **19% higher yield of protein isolate** by weight compared to isolates obtained from flour defatted with hexane. Additionally, protein isolates extracted from cake using SFE exhibited significantly **improved emulsifying capacity and water absorption capacity** ($p < 0.05$).

Gel electrophoresis and differential scanning calorimetry indicated the **presence of a higher concentration of proteins** in their native state in the flour defatted with SFE.



Results on the content of sulphydryl groups, surface hydrophobicity and protein dispersibility index also supported these conclusions.

The higher weight yield of protein isolate obtained is likely also attributed to the higher percentage of solubilized protein in the flour defatted using SFE compared to that obtained from hexane. Therefore, this study provides important information for the food industry to develop more sustainable and healthy production methods.

The **full scientific article** is published by the journal **Processes**.