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Effect of removing phenolic compounds on interfacial behavior of protein isolated from de-oiled sunflower cake

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Conclusion

Presence of phenolic compounds negatively affects foaming and interfacial properties.

Future directions

For more clear statements and better understanding about the foam ability of DP sunflower protein, other analytical approaches are planned: dynamic interfacial tension, ellipsometry as well as film pressure balance.

Results

Table 1 indicates that removing phenol content results in significant change in ash, protein, carbohydrate content and amino acid. Low influence in amino acid profile was observed (Table 2). Stronger viscoelastic structure, interfacial layer was observed for dephenolized samples (Figure 1) which was associated with less foam capacity (Figure 2).

Sunflower seeds naturally contain phenolic compounds. Interaction between protein and phenolic compounds are known as to have influence on protein functionalities.

How phenolic removal can affect the chemical composition, foaming and interfacial properties of sunflower protein?

Strategy

Sunflower protein, isolated from industrial cake “N” (natural sample, with phenolics) “DP” (de-phenolized sample)