Physical characterization of plant cell-wall dispersions

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Introduction

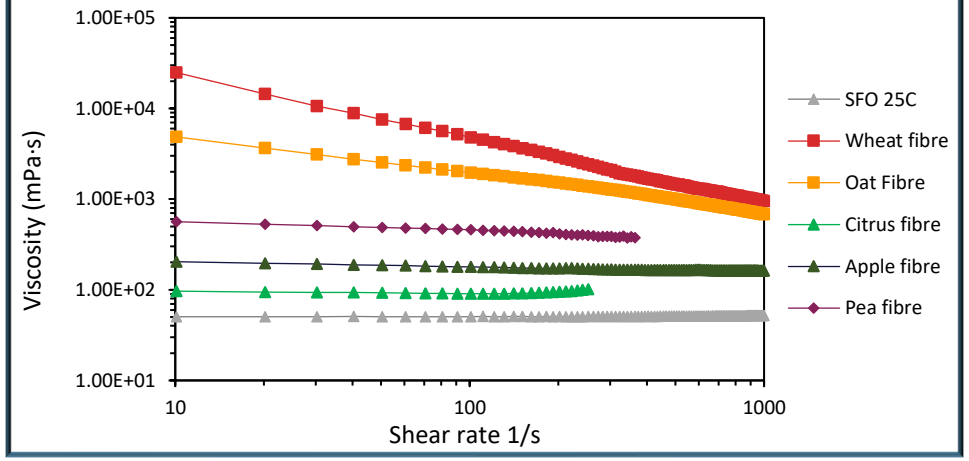
- Plant cell-wall materials (PCWM) are effective bulking agents with a dietary fibre (DF) functionality[1-3].
- This work considers PCWMs for structuring oil-continuous food matrices and enabling new strategies for designing healthier foods.

Methods

- The physical properties of wheat, oat, citrus apple and pea fibres were studied.
- The rheological behaviour of PCWM dispersed in SFO was examined.

Key Results

- The fibrous microstructure (oat and wheat fibre) is related to lower OHC, associated with the lower surface area available to the oil phase.
- The higher aspect ratio fibres exhibit more pronounced shear-thinning behaviour.
- The effect of fibre density is evaluated by comparing OHC and flow behaviour.



Conclusions

- The application of these PCWM in food formulations requires optimisation of
  - particle size
  - shape
  - hydrophobicity

Targeted flow profile

References

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