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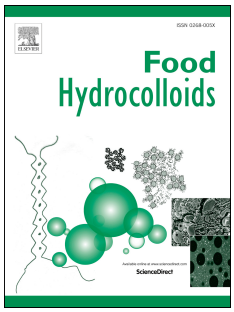

High pressure processing of beet extract complexed with anionic polysaccharides enhances red color thermal stability at low pH

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Highlights

- High pressure processing (HPP) beet root extract complexed (1:1) with locust bean gum (LBG), sodium alginate, or gum arabic improved red color stability of the extract pigments during thermal treatment at pH 3
- Extract complexed with the anionic polysaccharides, alginate and gum arabic showed the greatest improvement in color stability following HPP
- Gum arabic HPP treated complexes showed excellent cold storage color stability through six weeks
- Improved color stability appears coupled to the complexation with polysaccharide and independent of any impact HPP may have on the beet extract alone
- ATR-IR spectra show relative peak height increases near wavenumbers 990 and 920 cm^{-1} following HPP for the beet extract containing solutions, complexed or not.
- DPPH scavenging activity associated with the beet extract was not dramatically reduced by polysaccharide complexation nor HPP treatment