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Effect of heat treatment on protein profile of whey protein beverages

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There is interest in the production of heat-stable and clear beverages containing high levels of whey proteins. A challenge of incorporating whey proteins into sports beverages is that hot-fill treatment (88°C for 2min). The objective of this research is to study the effects that undergo the profile of whey proteins on a whey protein beverage (WPB) when exposed to the thermal treatment. WPB was prepared to mix 5% whey protein with 0.04% potassium sorbate, and 0.5M H3PO4 was used to adjust pH to 3.0 and 7.0. The protein particle size and zeta-potential were tested using a spectrophotometer. Lastly, the protein profile of beverages containing whey was determined by SDS-PAGE. Hot-fill treatment had a negative impact on the physiochemical properties of whey proteins. The formation of protein-protein complexes produced an increase in particle size and absolute zeta potential in WPB formulations at both pH 3.0 and 7.0.

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