

Microencapsulating Properties of Whey Proteins. 2. Combination of Whey Proteins with Carbohydrates

S. L. Young¹, X. Sarda¹, and M. Rosenberg¹

¹ Department of Food Science and Technology, University of California, Davis, Davis 95616-8598

Anhydrous milk fat was effectively microencapsulated by spray drying in wall systems consisting of combinations of whey protein with with carbohydrates lacking surface-active properties. Whey proteins were effective emulsifiers in the presence of these carbohydrates and enabled microencapsulation even at a concentration of 5% (wt/wt), respectively. All combinations of whey proteins and carbohydrates gave microencapsulation yields higher than 96%. The carbohydrates limited the extractability of the core by a solvent. Microencapsulation efficiencies were up to 93% when whey proteins were partially replaced by carbohydrates. The microencapsulating properties of wall solutions of whey proteins and commercial encapsulating agents consisting of carbohydrates were superior to those of only the carbohydrates. In all cases, spherical capsules were obtained in which the milk fat was physically well isolated from the environment. Combinations of whey proteins and carbohydrates were effective and functional microencapsulating agents.

Key Words: anhydrous milk fat • carbohydrates • microencapsulation • whey proteins

Submitted on August 20, 1992

Accepted on June 18, 1993

This article has been cited by other articles:



Journal of Dairy Science

▶ HOME

C. Vega and Y. H. Roos

Invited Review: Spray-Dried Dairy and Dairy-Like Emulsions--
Compositional Considerations

J Dairy Sci, February 1, 2006; 89(2): 383 - 401.

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF\]](#)

This Article

- ▶ [Full Text \(PDF\)](#)
- ▶ [Alert me when this article is cited](#)
- ▶ [Alert me if a correction is posted](#)

Services

- ▶ [Similar articles in this journal](#)
- ▶ [Alert me to new issues of the journal](#)
- ▶ [Download to citation manager](#)
- ▶ [© Get Permissions](#)

Citing Articles

- ▶ [Citing Articles via HighWire](#)
- ▶ [Citing Articles via Google Scholar](#)

Google Scholar

- ▶ [Articles by Young, S. L.](#)
- ▶ [Articles by Rosenberg, M.](#)
- ▶ [Search for Related Content](#)

PubMed

- ▶ [Articles by Young, S. L.](#)
- ▶ [Articles by Rosenberg, M.](#)

