



Coffee milk beverage produced for vending machine sale: Physical and oxidative stability

Sørensen, Ann-Dorit Moltke; Thomsen, Birgitte Raagaard; Matsuura, Tsutashi ; Jacobsen, Charlotte

Publication date:
2018

Document Version
Version created as part of publication process; publisher's layout; not normally made publicly available

[Link back to DTU Orbit](#)

Citation (APA):
Sørensen, A-D. M., Thomsen, B. R., Matsuura, T., & Jacobsen, C. (2018). *Coffee milk beverage produced for vending machine sale: Physical and oxidative stability*. Abstract from 2nd International Symposium on Lipid Oxidation and Antioxidants, Graz, Austria.

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Coffee milk beverage produced for vending machine sale: Physical and oxidative stability

Ann-Dorit Moltke Sørensen¹, Birgitte Raagaard Thomsen¹, Tsutashi Matsuura² and
Charlotte Jacobsen¹

¹Technical University of Denmark, National Food Institute (DTU Food)
Kgs. Lyngby, Denmark

²Research and Development center, Mitsubishi – Chemical Foods Corporation
ToKyo, Japan

Storing lipid containing products under extreme conditions can affect the oxidative stability of the product. Moreover, the physical stability can be influenced as well. Coffee beverage for vending machine sale is an example of a product stored under extreme and non-controlled conditions if the vending machine is without temperature control.

This study aimed at evaluating the oxidative stability of sterilized coffee beverages with different amounts of milk cream designed for sale in vending machines under conditions comparable to those that may occur in all time of year. Moreover, the physical stability of the coffee milk beverages was also evaluated. The study was designed with seven different coffee milk samples. The samples differed in the total amount of fat and proteins, 1.05 – 1.85% and 0.128 – 0.224%, respectively. Hence the ratio of fat to protein (1.03 – 8.26) was also varied between coffee milk samples.

Physical and oxidative stability of the coffee milk were measured during storage (2 months) at two different temperatures (20 and 50°C). The physical stability was evaluated from the droplet size measured and oxidative stability was evaluated from the concentration of hydroperoxides (PV) and secondary volatile oxidation products. It is hypothesized that the storage temperature can affect the oxidative stability of the coffee milk beverage samples. Moreover, the different amount of total fat and protein and ratios is expected to influence the volatile oxidation products formed in the coffee milk stored at the different temperatures.

Preliminary data from the study showed that PV was low in all coffee milk samples during 2 months of storage (0.5 - 2.4 meq. ROOH / kg oil). Moreover, the PV of the coffee seems to be unaffected by the storage temperature (20 and 55°C).