Effect of storage temperature on shelf life of liquid frying margarine

Azarifar M*1, Haddad Khodaparast MH2
1-Department of Food Science, Islamic Azad University , Sabzevar Branch, Sabzevar, Iran
*Email: maryam_af_1984@yahoo.com
2- Department of Food Science and Technology, Ferdowsi University of Mashhad, Iran

Objective: To observe changes in chemical and microbial qualities of liquid frying margarine during storage at different temperatures.

Methodology: Liquid frying margarine was prepared with canola oil, as oil phase at 3 different moisture (16, 8, 4%) levels. After formulation, the margarines were stored at low (3-4°C) and room (20-25°C) temperature, then analyzed for chemical and microbial properties up to 14 weeks.

Result and conclusion: Microbial contamination in margarines at different temperatures (consist of: mold and yeasts, coliform, E.coli and total count) didn’t achieve to the unusable situation. Total count in margarines at low temperature were lower than margarines that was stored at room temperature and margarines with higher moisture which was stored at same temperature were shown more microbial contamination after 14 weeks. The data indicated that the samples stored at room temperature with 16% moisture and high unsaturated fatty acid exhibited highest degree of peroxide value. The changes in peroxide value was least at low temperature with 4% moisture (peroxide value in margarine with 16% moisture and stored in room increase from 0.3 to 0.8 but in margarines with 16% moisture and kept in cool place the changes were from 0.3 to 0.45. It can be inferred from the results that liquid frying margarine with canola as base oil with 3 different moisture contents, could be stored at room temperature for 14 weeks.