

**ESTABLISHMENT OF MAXIMUM STORAGE
TIME FOR UHT STANDARDIZED MILK IN
INTERMEDIATE STORAGE TANK BY
CONSIDERING INFLUENCED FACTORS.**

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by

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Abstract

The aim of this study was to establish maximum storage time for an intermediate storage tank by considering influenced factors which is used to store UHT standardized milk in case of breakdown. The study was carried out in 2 parts.

In the first part, the quality of raw materials, line cleanliness and temperature of standardized milk in intermediate storage were investigated for 15 batch samples as influenced factors for storage time using Total Plate Count (TPC), bacterial spores, yeast and molds. The obtained results were compared with standard norms (Nestle Local Norms). Temperature of standardized milk was considered as constant. In second part, to establish maximum storage time, 15 batch samples of standardized milk were investigated using pH, conductivity and TPC initially, after 12 hours, after 24 hours, 36 hours, 48 hours and 72 hours. According to the comparison with standard norms it showed that the raw materials were microbiologically accepted for all 15 batch samples. The results from water analysis after Clean in Place (CIP) showed that there were no microbial contaminations after CIP in interior surfaces of the lines. The average pH changed deviated from recommended pH range (6.85 – 7.20) after 24 hours according to the 95% confidence interval level. For 36 hours, 95% CI level was (6.84, 6.93). Similarly, the average TPC deviated from recommended value (10^5 CFU/g) after 24 hours. According to the results of 1 sample t test the average TPC in intermediate storage tank at 36 hours was greater than or equal to 10^5 CFU/g. The average conductivity of standardized milk at 24 hours was 1.0 – 1.5 μ S/cm suggesting a recommended conductivity range for standardized milk stored in intermediate storage tank. Statistical analysis of data illustrated that maximum storage time for intermediate storage was 24 hours if the temperature maintained at 8⁰C with quality raw materials, and line cleanliness.

Key words: UHT, Intermediate storage tank, pH, Conductivity, TPC