

Study on the Effect of Raw Milk Properties on the Sensory Attributes of Flavoured Pasteurized Milk from a Dairy Manufacturing Plant in Sri Lanka

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The consumer acceptability and the sensory attributes of flavoured pasteurized milk products are influenced by the raw milk quality (i.e., fat, and solid not-fat (SNF) percentages). The current study was designed to evaluate the quality of raw milk received at the dairy processing plant and to determine whether there is an impact of added skimmed milk powder (SMP) on the sensory attributes of the finished product. The plant used milk from 8 collecting centers to produce pasteurized milk products. The fat% (Gerber method), SNF%, and keeping quality (Resazurin test method) of raw milk received from each center were analyzed to identify significant variation within a center with time and between centers. Sensory analysis was conducted to identify consumer preference for the milk samples (3 flavours: vanilla, strawberry, and chocolate) based on the amount of SMP added. The results indicated that within each center there was a slight variation in the initial fat%, SNF% and keeping quality. However, this was not statistically significant ($P>0.05$). The pairwise comparison between centers indicated that there were significant differences in the fat% SNF% and keeping quality ($P<0.05$) between some of the milk collecting centers. Bopaththalawa center provided the milk with the highest quality considering all 3 factors (mean fat%: 4.08, SNF%: 8.51, and keeping quality: 6 days). Samples produced with the highest initial fat% and lower SMP had the highest consumer preference. The study results indicated that the consumer preference for the final product relies on both SMP% and raw milk fat%. Therefore, to produce a final product with a consistent flavour profile, the manufacturer should consider using fat-free raw milk and adding cream at the standardization to get the required fat percentage.

Keywords: Flavoured Pasteurized Milk, Raw Milk, Sensory Properties, Skimmed Milk Powder, Solid Non-Fat

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