

APPLICABILITY OF PCR BASED ASSAY FOR THE DETECTION OF COW'S MILK ADULTERATION IN BUFFALO CURD

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Adulteration of buffalo milk with cow's milk is common in dairy industry as buffalo milk is more expensive than cow's milk due to its high fat content. The fraudulent practice of mixing buffalo milk with cow's milk is seen among many buffalo curd producers who seek unethical economic benefits. Present study evaluated the applicability of PCR based assay for the detection of cow's milk adulteration in buffalo curd available in the municipal council area in Kandy. Two sets of species-specific primers, targeting *cytochrome b* gene, giving rise to 272bp for cattle and 242bp for buffalo, amplified fragments, were used. Mitochondrial DNA of cow and buffalo milk was successfully extracted using Purelink Genomic DNA mini kit. The amplified products were visualized on ethidium-bromide stained agarose gel. The sensitivity of the PCR method was 1% and it was determined with both model milk and curd prepared using pure buffalo milk with a series of defined incorporation of cow's milk. The applicability of the PCR assay was evaluated with six different market curd brands labelled them as "buffalo curd" in triplicate. Undeclared cow's milk was detected in four curd brands available in the market while two curd brands were confirmed to be with pure buffalo curd. The composition and microbiological parameters of both prepared and market buffalo curd were compared with SISI buffalo curd values. Results revealed that mixing of cow's milk only influenced the fat % of the buffalo curd. In conclusion, PCR assay is an applicable technique to detect the cow's milk adulteration in buffalo curd and two third of the studied buffalo curd brands available in the market, are adulterated with cow's milk.

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