ABSTRACT

In fluid milk based products such as UHT processed milk the finished products have to be checked for their quality to be certain that no unsterile product leaves the factory. In a routine quality control system, the results from incubated package controls are used as one of the parameters on which a release decision is based. Quality control of these products can be done destructively or non-destructively. Elec-Testing, is commonly used to test fully filled dairy based Tetra packs resulting from UHT processing.This study was focused basically to test the sterility of UHT dairy products in tetra packaging non-destructively by using Elec-Tester and implement the Elec-Tester on the production level.

Before starting with the testing of the units, the Tester was calibrated by using some sterile samples. The validation was carried out for every batch when packs were checked prior to releasing. When standards and tightened level are applied, 500 and 1000 number of samples were taken, from each code, respectively representing all the layers including "event" and "line" samples to test through the Tester.

All the samples which were used for the calibration and set-up the reference window, were ensured as good by opening, measuring the pH, checking the sample visually and also plating for microorganisms. The recap rejects were less than 5% of the total samples checked. No spoiled sample was found acceptable. The causes for the rejection were the variation of the net weight, changes in package integrity and sedimentation of product particles when the temperature was kept constant.

All the spoiled samples were tested for its unsterility. Sealing, product quality, packaging material damages. The most significant factor was identified as the damages during handling and it was 53% of the total effects. Secondly 34% arising from the sealing defects. Those handling defects can be minimized by paying more attention during packaging, transportation etc. and also can use shrinkable packaging materials can be used to reduce these defects. The microbial count in the air should be controlled. For that "air handling unit" can be established in the plant.