

**COMPARISON OF QUALITY CHARACTERISTICS OF
MILK POWDER PRODUCED IN MILCO (HIGHLAND)
SPRAY DRIED MILK FACTORY, AMBEWELA**



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2018

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ABSTRACT

Ambewela MILCO (Highland) Spray Dried Milk Factory is the only factory which produces milk powder under the brand name of "Highland Milk Powder" among five factories belongs to MILCO Company (Government). Raw milk, which is collected from different part of the country, transported to Ambewela MILCO Factory to produce full cream milk powder with highest quality. Ambewela MILCO (Highland) Spray Dried Milk Factory was upgraded their milk powder production capacity recently. Milk powder taste plays an important role in quality aspects of milk powder as well as in economic aspects. Newly upgraded powder plant was producing milk powder with an abnormal taste when it was in storage condition for two months period. In last year this issue was increased and had a huge lose to the powder factory. So this research was conducted to find out the most suitable reason for an abnormal taste of milk powder in the storage period.

A trial experiments were conducted to find out the difference between the moisture content, Total Colony Count, Yeast & Molds and Lipolytic Counts in Old Powder Plant & New Powder Plant. MILCO Spray Dried Milk Factory does not evaluate the lipolytic count in milk powder but evaluates only for butter samples

Newly upgraded Ambewela MILCO (Highland) Spray Dried Milk Factory produces milk powder with moisture content value closer to the 3.00%, Total Colony Count below than the 20000, Yeast and Molds below than the 10000 and there is no lipolytic count in milk powder. Based on the experiments conducted, there was positive lipolytic count in the milk powder which produced form new powder plant. But there was no any lipolytic counts present in milk powder produced from old plant. Milk powder samples were taken from

different places in powder processing units in both new and old powder plant and there was significant difference in lipolytic count between new and old milk powder processing units

MILCO Spray Dried Milk Factory uses a circulation cleaning process to clean the New Powder Plant and it is engaged with the operational system. This circulation process also use to clean the butter plant. Impurities from butter plant can stagnate in the powder processing machines because of this circulation process. An experiment was conducted to evaluate the cleaning process of the powder plant. For that swab samples were taken to analyze the lipolytic count. Results shows positive lipolytic count.

Reports from the Germany laboratories confirmed, lipase enzyme is positive in the milk powder sample which had abnormal taste after two months of storage period. When the lipolytic microbes present in the milk powder they break down the fat by using lipase enzyme. Experiment results confirmed that reason for the abnormal taste of the milk powder is due to the presence of lipolytic bacteria in the milk powder in new powder plant.

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