



The significance of proteolytic psychrotrophs as a cause of milk flocculation / protein instability

(PRJ-0091-2016)

University of the Free State

Year 2016 (January 2016 till December 2016)

Project goals

Objective 1 - To do a literature review of psychrotrophic counts and types in refrigerated milk, the potential sources of contamination and the seasonal effect on the prevalence of the bacterial contaminants: January 2016 – May 2016, but also adding new information as it becomes available (until 2018)

Achievements

The literature study was completed at the end of 2016.

No Non-achievements / underperformance has been reported

Objective 2 - Evaluation of accelerated quantitative methods for the detection of psychrotrophic bacteria in milk. Goal: To compare conventional methods for detection of psychrotrophic bacteria with accelerated methods. Milk samples will also be subjected to incubation at 7 oC until the milk flocculates and the prevalent bacterial types isolated from Pseudomonas selective agar at that point will be identified: March 2016 - September 2016

Achievements

Objective 2 was completed at the end of 2016.

Conventional methods for detection of psychrotrophic bacteria were compared to accelerated methods. The results are indicated in the final report and final popular report. See attached
The prevalent bacterial types isolated from Pseudomonas selective agar were isolated and identified. The results are indicated in the final report and final popular report. See attached.

No Non-achievements / underperformance has been reported

Objective 3 - To determine the correlation of microbial quality counts of

raw milk with accelerated psychrotrophic tests. Goal: To compare the total bacteria counts, coliform counts and psychrotrophic counts of bulk raw milk and the Psycho-Fast test. The most prevalent psychrotrophic bacterial types when the milk flocculates will also be determined: March - September 2016

Achievements

Objective 3 was completed at the end of 2016.

Correlation between the total bacterial counts, coliform counts and psychrotrophic counts of raw milk from 10 farmers were determined. The results are indicated in the final report and final popular report. See attached.

The most prevalent proteolytic psychrotrophic bacterial types when milk flocculates as measured by the Alizarol test, has been determined. The results are indicated in the final report and final popular report. See attached.

No Non-achievements / underperformance has been reported

Income and expenditure statement

Income and expenditure statement	MilkSA Final financial report PRJ-0091.pdf
Unnecessary spending during period	No

Popular Report

[MilkSA final popular report PRJ-0091.pdf](#)

Additional documentation

[MilkSA final literature report PRJ-0091.pdf](#)

[MilkSA final project report.pdf](#)

Statement

Levy funds were applied only for the purposes stated in the contract	Yes
Levy funds were applied in an appropriate and accountable manner	Yes
Sufficient management and internal control systems were in place to adequately control the project and accurately account for the project expenditure	Yes
The information provided in the report is correct	Yes