

DEDICATION

To my father

Mother

Brothers

Sisters

And colleagues

With love and respect

Bhagiel

Acknowledgements

All praise belongs to Allah, the Almighty for his unlimited support. Peace and blessing of Allah be on prophet and messenger Mohamed and his pious companions and followers.

Thanks and gratitude to Dr. Ahmed Khalil Ahmed for his keen supervision, patience and valuable packing throughout the course of this study.

I am grateful to Dr. Ahmed Alawad, my co-supervisor for his continued help. My deep thanks are extended to Prof. Dr. Olfclaesson (Sweden) for his advices and great help of providing us with preservatives (LPS bags), Ministry of Animal Wealth for providing us the preservative for the third face of this study. And also my thanks extended to Dr. Kamal Abdelbagi, Dr. Mohamed Tag Aldin, Dr. Salah eldin Hamad, Ustaz Mohamed Ahmed Abdelbagi and Ustaz Hamza Abdallah for their appreciable help.

I am really indebted to Sudan University of Science and Technology, and Kenana Sugar Company (KFD staff) without whom the present work would remain in dim.

I am grateful to my colleagues the staff of Animal Production Department for their advices and encouragements.

ABSTRACT

The current study was carried out to investigate the preservation of raw milk by activation of LPS in summer (39 – 45.2° C) and winter (23.5 – 39° C) in different production systems: (nomads), small urban producers in Kenana and specialized farms (KPF) and the milk container transported in stainless steel and Plastic.

Milk treated samples were examined every 2 hours for acidity percentage, pH value, clot-on boiling, alcohol, methylene blue, resazurin tests, fat, protein content and total bacterial counts.

The results indicated that there's a significant ($P < 0.05$) reduction in acidity development (expressed as lactic acid percentage) of lactoperoxidase treated samples in summer and winter and also milk produced from different sources (nomads milk (low quality), small urban producers in Kenana and specialized farm (KPF) milk (high quality)) and in different containers (plastic and stainless steel) for transportation. And also for determined pH revealed a lower deterioration in treated samples. Also the clotting time, alcohol, methylene blue resazurin tests and TBC were confirmed the results obtained from acidity test.

Lactoperoxidase treatment slightly affected milk fat and protein content of treated milk, and it prolong the milk shelf-life 7.5 hours in winter's milk and 6 hours in summer's milk.

بسم الله الرحمن الرحيم

خلاصة الأطروحة

أجريت هذه الدراسة لمعرفة أثر تنشيط إنزيم اللاكتوبيروكسيديز في إطالة مدة حفظ عينات اللبن الخام في فصلي الصيف (39 - 45.2° م) والشتاء (23.5 - 39° م)، علي عينات لبن منتجة من نظم إنتاج مختلفة (تقليدي يدوي، صغار منتجين في المدن ومزرعة حديثة) وكذلك علي عينات مذقولة في أوعية من البلاستيك والمعدن غير قابل للصدأ.

العينات المعاملة أجريت عليها قياسات النسبة المئوية للحموضة وإختبار pH وزمن التخثر للكحول وإختزال صبغة أزرق الميثيلين و إختزال الريزوزارين ومحتوي الحليب من الدهن والبروتين والعدد الكلي للبكتيريا في الحليب، و قد تم الإختبار علي رأس كل ساعتين من زمن التجربة.

أظهرت الدراسة نتائج معنوية بالنسبة للحموضة (صيفاً وشتاءً) ونظم الإنتاج (التقليدي اليدوي، وصغار منتجي المدن والمزارع المتخصصة) وكذلك علي الأوعية (بلاستيكية ومعدنية (غير قابل للصدأ).

كما أعطت نتائج اختبارات التجبن بالغليان والتجبن بالكحول واختزال صبغتي أزرق الميثيلين و الريزوزارين نتائج مؤكدة للتي تم الحصول عليها من الحموضة لعينات اللبن المختلفة.

أظهرت الدراسة أن المعاملة باللاكتوبيروكسيديز له تأثير غير معنوي علي محتوى الحليب من الدهن والبروتين والذي أطال مدة حفظ اللبن 7.5 ساعة لحليب الشتاء و 6 ساعات لحليب الصيف.

أوصت الدراسة بإستعمال نظام تنشيط اللاكتوبيروكسيديز لحفظ اللبن الخام المنتج بالحلب اليدوي المثالي والحلب الآلي، كما أوصت بتخزين و نقل الحليب في أواني (غير قابلة للصدأ)

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