TABLE OF CONTENTS

SUMMARY

A. Goat's milk samples:

A total of 100 random samples of raw goat's milk were collected from a dairy farm in Kafer El- Sheikh province. Samples were transferred to the laboratory with a minimum of delay where they were examined chemically and microbiologically.

I. Chemical examination:

The fat of the examined goat's milk samples ranged from 2.45 to 6.90% with a mean value of 5.25 ± 0.16, while protein contents ranged from 2.39 to 6.20 % with a mean value of 3.50 ± 0.08%. Determination of lactose contents of raw goat's milk denoted that it varied from 2.83 to 6.56 % with a mean value of 4.54 ± 0.06 %. The total solids content of the examined goat's milk samples ranged from 10.64 to 19.78 % with a mean value of 13.90 ± 0.20%, while the solids not fat contents ranged from 6.90 to 9.62% with a mean value of 8.44 ± 0.06%. The examined samples of goat's milk had a minimum titratable acidity of 0.11% and a maximum of 0.21% with a mean value of 0.18 ± 0.22%. The somatic cell counts of the examined samples ranged from 0.26 x 10^5 to 78.70 x 10^5 cells/ml with a mean value of 14.69 x 10^5 ± 1.54 x 10^5.

II. Microbiological examination:

The microbiological analysis of the examined goat's milk samples revealed that the aerobic mesophilic count ranged from 2 x 10^5 to 2 x 10^9/ml with a mean value of 2.1 x 10^8 ± 5.3 x 10^7/ml. The Staphylococcus aureus count in the examined goat's milk samples ranged from 1 x 10 to 5 x 10^3/ml with a mean value of 8.3 x 10^2 ± 3.1 x 10^2/ml. On the other hand, the technique of most probable number (MPN) showed that 63% of goat's milk samples were contaminated with coliforms. The same technique showed that 18% of goat's milk samples had faecal coliforms while E. coli organisms were detected in 8% of goat's milk samples. While, the enterococci count ranged from 1.4 x 10^2 to 6.3 x 10^3/ml. with a mean value of 1.8 x 10^3 ± 2.3 x 10^2/ml.

B. Ewe's milk sample

A total of 50 random farm ewe's milk samples were collected and examined chemically and microbiologically.

I. Chemical examination:

The fat contents of the examined ewe's milk samples ranged from 4.16 to 7.66% with a mean value of 6.06 ± 0.14, while their protein contents varied from 5.05 to 5.99 with a mean value of 5.52 ± 0.04 %. The lactose content of the examined samples ranged from 4.54 to 6.72 with a mean value of 5.72 ± 0.08 %.

Determination of total solids percent of the examined ewe's milk samples showed that it ranged from 13.64 to 18.71 with a mean value of 15.86 ± 0.16. While their solids not fat contents varied from 8.80 to 11.01 with a mean value of 9.76 ± 0.09 %.

The examined ewe's milk samples had a minimum titratable acidity of 0.13 and a maximum of 0.20 with a mean value of 0.16 ± 0.01 %, while their somatic cell count ranged from 0.6 x 10^5 to 13.18 x 10^5/ml with a mean value of 6.29 x 10^5 ± 0.51 x 10^5 cells/ml.

II. Microbiological examination:

The microbiological examination of ewe's milk samples showed that the aerobic mesophilic count ranged from 1 x 10^7 to 1 x 10^9/ml with a mean value of 2.7 x 10^8 ± 4.6 x 10^7. While, Staphylococcus aureus count varied from 5 x 10 to 1.3 x 10^3 with a mean value of 2.9 x 10^2 ± 3.7 x 10/ml. On the other hand (66%) of examined ewe's milk samples were contaminated with coliforms. While, 34% of examined samples had faecal coliforms. Moreover, E. coli organisms were detected in 18% of ewe's milk samples. The enterococci count ranged from 2 x 10^2 to 6.3 x 10^3/ml with a mean value of 1.8 x 10^3 ± 2.3 x 10^2/ml the highest frequency distribution (64%) was found more than 10^3/ml.

The results of the effect of LPS on the keeping quality of goat's milk stored at room temperature (25 °C) showed that the

aerobic mesophilic count, Staph. aureus count, coliform count and enterococci count decreased from $4x10^9$ to 9×10^7, 6×10^2 to 6×10, 3×10^3 to 2.2×10^2 and 1×10^3 to 1×10^2 from 0 time to 24 hrs then clotting on boiling occurs in the 2nd day, while in control samples all these parameters increased from 0 time to 12 hrs then clotting on boiling occur.

At refrigeration temperature (5 °C) the aerobic mesophilic count, Staph. aureus count, coliform count and enterococci count decreased from 9×10^8 to 2×10^2, 1.2×10^2 to 1×10, 5×10^3 to 9×10 and 7×10^2 to 9×10 while the titratable acidity remained constant (0.1) at the 9th day but in control sample these parameters decreased to some extent but clotting on boiling occurs at the end of the 5th day from storage.

Ewe's milk stored at room temperature (25 °C) revealed that, the number of aerobic bacteria decreased from 1×10^{10} to 1×10^8/ml from the first hour to 48 hours, Also the Staph. aureus count decreased from 2×10^2 to 5×10/ml. The coliform count of the treated milk sample decreased from 3×10^2 to 1×10/ml and the enterococci count also decreased from 5×10 to 1.5×10/ml, while their acidity percentages decreased from 0.16 to 0.12%. On the other hand all these parameters increased in control sample and clotting on boiling occurred after 24 hrs. While in treated sample clotting on boiling occurred after 48 hrs.

The ewe's milk sample that stored at 5 °C showed that the aerobic count, Staph. aureus count, coliform count, enterococci count and acidity content decreased from 9×10^8 to 4×10^2, 6×10^2 to 4×10, 8×10^3 to 1×10^2, 1×10^2 to 1×10 and 0.1 to 0.09 from the first day to 9th day, while the control sample clotted on boiling after the 5th day.

From all present data it is revealed that the application of lactoperoxidase system on raw milk improves it's keeping quality either at room temperature or at refrigeration temperature. On the other hand there is no effect of potassium sorbate on the growth of Brucella melitensis organisms.