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SUMMARY

One hundred random samples, 50 of raw milk and 25 each of kareish cheese and yoghurt, collected from different localities in Sharkia governorate, Egypt. A survey was undertaken to determine the incidence of coliforms spp. and prevalence of Klebsiella spp. in examined raw milk, kareish cheese and yoghurt samples.

All milk samples proved to be contaminated with coliforms by using (VR.B)/ml. The coliform count ranged 2×10^3 to 1.4×10^{10} with a mean value of $5.08 \times 10^8 \pm 3.002 \times 10^8$ .The highest frequency distribution (38 %) lied within the range $10^6 - 10^8$, while in case of (MPN/ml), the level of coliform content in examined milk samples ranged from 4×10^2 to 5×10^0 with a mean value of $1.28 \times 10^8 \pm 1.0 \times 10^8$ .The highest frequency distribution (40%) lied among $10^6 - 10^8$.

Klebsiella pneumonia, K.rhinoscleromatis, K.ozaenae, K.oxytoca, Citrobacter freundii, Cit.diversus, Enterobacter cloacae and Ent.aerogenes could be isolated at varying percentages ranging from 6% to 22% in examined raw milk samples.

All kareish cheese samples proved to be contaminated with coliforms by using (VRB/g). The coliform count was ranged from 4.1×10^5 to 1.6×10^{10} with a mean value of $1.39 \times 10^9 \pm 0.61 \times 10^9$/ml. The highest frequency distribution (68%) lied within the range $10^8 - 10^{10}$. While in case of (MPN/g) the level of coliform count detected in kareish cheese samples was ranged from 21.0×10^4 to 5×10^9 with a mean value of $3.32 \times 10^8 \pm 2.04 \times 10^8$. The

highest frequency distribution (56%) lied among 10^6 - 10^8. The most prevalent coliform species isolated from the examined kareish cheese samples were Klebsiella pneumonae (12%), K.oxytoca (8%), K.ozaenae (12%), K.rhinoscleromatis (8%), Enterobacter aerogenes (16%), E.cloacae(12%), Citrobacter diversus(12%) and Cit.freundii(20%).

All examined yoghurt samples proved to be contaminated with coliforms by using (VRB/g) where as the coliform content was ranged from 2.5 x 10^3 to 6.5 x 10^5 with a mean value of 8.15 x 10^4 ± 3.29 x 10^4. The highest frequency distribution (52%) lies within the range 10^4 – 10^5. While in case of (MPN/g), the level of coliform count in yoghurt samples ranged from 4 x10^2 to 7 x10^4 with a mean value of 7.3 x 10^3 ± 2.88 x 10^3. The highest frequency distribution (60%) lies among 10^3 – 10^4. Klebsiella pneumonia, K.oxytoca, K.ozaenae, Enterobacter cloacae, Ent.aerogenes, Citrobacter freundii and Cit.diversus could be isolated in 12%, 20%, 4%, 16%, 20%, 16%, and 12% from the examined yoghurt samples respectively.

The public health importance and economic significance of existing microorganisms as well as the suggestive measures of quality of examined samples were discussed.

CONCLUSION

The results presented in this study provide that high numbers of coliform groups contaminate raw milk, kareish cheese and Yoghurt. This condition is indicative of inadequate hygiene during production, handling and during manufacture of kareish cheese and yoghurt.

Also the objectionable heavy contamination of milk, kareish cheese and Yoghurt with different types of coliforms and the presence of Klebsiella strains suggested a public health hazard besides rendering the raw milk and the concerned products of impaired quality.

Therefore to improve the quality of milk and its products, the following suggestions are to be considered:

- Strict hygienic measures should be imposed for milk production, handling and storage to prevent such contamination.

- Great particular attention must be paid the care of efficient cleaning and sanitization of milk contact surfaces of equipment in order to produce milk of low bacterial count.

- Educational programs should be imposed for producers, handlers and processors to improve the quality of the product and ensure maximum safety to the consumers.

❖ To improve the quality of locally manufacturcd kareish cheese the following suggestions are to be considered:

a- High quality milk, produced under the most possible hygienic conditions should be used.

b- Persons sharing in production or handling should be healthy and get acquired with self-hygiene.

c- Utensils and should be well constructed, clean sterilized.

d- Periodical inspection by specialists on processing establishments should be conducted.

❖ Application of HACCP on large dairy plants.

In conclusion, the concerned authorities should impose regulations and bacteriological standards and take active part in the control of milk production and handling to improve the quality of produced milk and to safe guard the consumers from being infected.