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الميكروب المكور العنقودى الذهبى فى اللبن
وبعض منتجاته

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تم جمع عدد ٢٠٠ عينة من اللبن والقشده والجبن القريش والجبن المطبوخ من
أسواق مدينة الزقازيق لمعرفة مدى تواجد الميكروب المكور العنقودى الذهبى .

وقد دلت النتائج على أن هذا الميكروب تواجد بنسب ١٦ ، ١٤ ، ٢٨ ، ٤ ٪ على
التوالى . وكذلك تم دراسة العلاقة بين افراز انزيم DNase وخاصية التجلط
للميكروب .

وتمت مناقشة الاهمية الصحية لوجود هذا الميكروب فى اللبن ومنتجاته على صحة
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STAPHYLOCOCCI IN MILK AND SOME DAIRY PRODUCTS (With Two Tables)

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SUMMARY

Two hundred samples, 50 each, of raw milk, cream, kariesh cheese and processed cheese were examined. Coagulase positive staphylococci proved to be present in 16%, 14%, 28% and 4% of examined samples respectively. While coagulase negative staphylococci could be detected in 26%, 22%, 26% and 16% of examined samples respectively. The relationship between coagulase and DNase activities is discussed.

INTRODUCTION

Staphylococci are still among the organisms most commonly involved in dairy product food poisonings. The organism may be found in milk and milk products as a result of contamination from the bovine udder or from other sources. In absence of proper colling, this organism may grow and produce potent enterotoxins causing food poisoning among consumers (MULLAR, 1974; MOL & VINCENTIE, 1975 and HEKNEBY & GONDROSEN, 1981).

Realizing that staphylococci enterotoxins are thermostable, hence contaminated dairy products may contain the enterotoxins even if they are heat treated (MINOR and MARTH, 1972).

Therefore, it is our aim to investigate the rate of staphylococcal contamination of raw milk, cream, kariesh cheese and processed cheese.

MATERIALS and METHODS

Two hundred samples (50 each) of raw milk, raw cream, kariesh cheese and processed cheese were collected from different localities in Zagazig and its suburbs to be examined for presence of staphylococci.

Each sample of milk or cream was perfectly mixed and subjected to Guaiac test (SCHONBERG, 1965) for detection of heat treatment. Samples proving to be heat treated were rejected. While cheese samples were thoroughly mashed in a sterile electrical mixture and 1/10 dilutions were prepared using worm sterile 2% sod. citrate sol. (A.P.H.A., 1978).

Staphylococci were isolated on mannitol salt agar (OXOID, 1982) from milk sediments and from 1/10 dilutions of the other products. Suspected colonies were picked up on agar slants for identification according to CRUICKSHANK *et al.* (1975).

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The DNase test was carried on coagulase positive strains as well as coagulase negative strains and results obtained are recorded.

RESULTS and DISCUSSION

Results recorded in Table (1) show that coagulase positive and coagulase negative staphylococci could be isolated from 16% and 26% of raw milk samples, 14% and 22% of cream samples, 28% and 26% of kariesh cheese samples and 4% and 16% of processed cheese samples. Similar staphylococci percentages were detected in cream by HAFEZ (1976), while higher percentages in milk were recorded by GHOSH and LAXIMINARAYANA (1974) and SEVESHNIKOVA *et al.* (1978).

Regarding cheese, the results obtained substantiate what have been reported by EL-BASSIONY and AHMED (1979), SHELAIH (1979) and AMER (1978) in kariesh cheese and AL-ASHMAWY *et al.* (1977) and SAUDI (1978) in processed cheese.

All strong coagulase positive staphylococci strains produced DNase, while only 60% of positive and 50% of weakly positive coagulase strains produced DNase. On the other hand, 24.44% of coagulase negative strains produced DNase.

Staphylococci are wide spread in nature, they are members of the normal bacterial flora of the skin and mucous membranes. The coagulase positive staphylococci were frequently involved in suppurative infections, hence their presence in foods frequently occurs especially with neglected sanitary precautions. When conditions are favourable for growth and multiplication in the food article, their enterotoxins are consequently increased and the food is likely to be dangerous.

Although proper pasteurization of milk kills staphylococci, the enterotoxins are heat stable and dairy products may still contain efficient amounts of the enterotoxins to cause food poisoning episode.

Staphylococci have been implicated in several food poisoning outbreaks (MINOR & MARTH, 1972, MOL & VINCENTIE, 1975 and HEKNBY and GONDROSEN, 1981).

Although most enterotoxin producing strains are coagulase positive, yet enterotoxinogenic coagulase negative strains have been reported by MONTIE' *et al.* (1970).

Table (1)
Incidence of staphylococci in examined samples

Product	Total No of samples	Coagulase positive samples		Coagulase negative samples	
		No	%	No	%
Raw milk	50	8	16	13	26
Raw cream	50	7	14	11	22
Kariesh cheese	50	14	28	13	26
Processed cheese	50	2	4	8	16

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Table (2)
Relationship between coagulase and DNase activities
in isolated staphylococci

Coagulase	Number of isolates	DNase positive	Accuracy
Strong +ve (+++)	15	15	100 %
Positive (++)	10	6	60 %
Weak +ve (+)	6	3	50 %
Negative	45	11	22.44 %

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