الميكروب المكور المنقوذى الذهبى في اللبن
وبعض منتجاته

إبراهيم عامر ، محمد شليح * محمد السيد

تم جمع عدد ٢٠٠ عينة من اللبن والقصب والجبن القرئش والجبن الطريج من أسواق مدينة الزقازيق لمعرفة مدى تواجد الميكروب المكور المنقوذى الذهبى:

وقد دلت النتائج على أن هذا الميكروب تواجد بنسبة ١٤% على التواصل. وكذلك تم دراسة العلاقة بين افراز انزيم DNase وخاصية التجلط للميكروب.

وتمت مناقشة الامنية الصحية لوجود هذا الميكروب في اللبن ومنتجاته على صحة الإنسان:

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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. Coagulate positive staphylococci proved to be present in 16%, 14%, 28% and 4% of examined samples respectively. While coagulate negative staphylococci could be detected in 26%, 22%, 26% and 16% of examined samples respectively. The relationship between coagulate 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 & VINCIENTE, 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 warm 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).


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 SEVESNIKOVA et al. (1978).

Regarding cheese, the results obtained substantiate what have been reported by EL-BASSIONY and AHMED (1979), SHELALI (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 widespread 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 efficent 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 HEKNEY 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>
<thead>
<tr>
<th>Table (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incidence of staphylococci in examined samples</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Product</th>
<th>Total No of samples</th>
<th>Coagulase positive samples</th>
<th>Coagulase negative samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw milk</td>
<td>50</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>Raw cream</td>
<td>50</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>Kariesh cheese</td>
<td>50</td>
<td>14</td>
<td>28</td>
</tr>
<tr>
<td>Processed cheese</td>
<td>50</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

STAPHYLOCOCCI IN MILK

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

<table>
<thead>
<tr>
<th>Coagulase</th>
<th>Number of isolates</th>
<th>DNase positive</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong +ve (+++)</td>
<td>15</td>
<td>15</td>
<td>100 %</td>
</tr>
<tr>
<td>Positive (+++)</td>
<td>10</td>
<td>6</td>
<td>60 %</td>
</tr>
<tr>
<td>Weak +ve (+)</td>
<td>6</td>
<td>3</td>
<td>50 %</td>
</tr>
<tr>
<td>Negative</td>
<td>45</td>
<td>11</td>
<td>22.44 %</td>
</tr>
</tbody>
</table>

REFERENCES


