قسم العراقية الصحية على الأغذية
كلية الطب البيطري - جامعة أسوان
رئيسي القسم: د. يoussef لطفي

الميكروبات المعوية في بعض منتجات الألبان

توضيح البسيوني

تم جمع عينة من منتجات الألبان المختلفة من أسواق مدينة أسوان، وذلك
لعد وعزل الميكروبات الكروية المعوية.

وافقت النتائج على وجود هذه المجموعة من الميكروبات في 91%.
76% 85% الأشخاص والجديد المطبوخ والزرد على التوالي. وقد كان متوسط العدد الكلي
لهذه الميكروبات في الحرام أوسم من العينات هو 10 x 10
4 x 3 x 10 x 10 x 10 x 10 x 10 x 10 x 10
التوازي.

أن وجود الميكروبات الكروية المعوية في منتجات الألبان لهدف
أهداف الاحتياطات الصحية أثناء تصنيع وتداول هذه المنتجات جانب ما قد-
تكون هذه الميكروبات في خطر على الصحة العامة وفساد المنتج.
ENTEROCOCCI IN SOME DAIRY PRODUCTS
(With 3 Tables)

By
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SUMMARY

A total of 102 samples of milk powder, baby foods, ice-cream, processed cheese and table butter were collected from Assiut City markets for the enumeration and isolation of existing enterococci.

Enterococci were detected in 40.91, 70, 81.82, 54.55 and 87.5% of the examined samples respectively. The mean value of enterococci counts was 32.1x10³, 80.4x10³, 33.6x10³, 47x10³ and 130.7x10³ in the examined samples respectively. Dairy products, of improperly handled, result in serious troubles to both, producers and consumers.

INTRODUCTION

The enterococci may have a distinctive role as indicators of poor factory sanitation, owing to their relatively high resistance to drying, detergents or disinfectants, as well as to freezing temperature. Moreover, these organisms are also implicated in food spoilage (ANGELOTTI et al. 1963) and food poisoning outbreaks (GREVOKA, 1968; SEDOVA, 1970 and ERWA, 1972). Several investigators (ALEKSIJEVA, 1974, 1976, 1977; EFTHYMIOU et al. 1974; AHMED & EL-BASSIONY, 1979; SALLAM, 1979 and BATISH et al. 1982) have reported the occurrence of enterococci in dairy products. The data reported by SARASWAT et al. (1965) emphasize the value of enterococcus count as a sanitary index for butter.

The main object of the present investigation is to asses the incidence and sanitary significance of enterococci in some dairy products marketed in Assiut City.

MATERIAL and METHODS

102 random samples of milk powder, baby foods, ice-cream, processed cheese and table butter were collected from Assiut City markets for the enumeration and isolation of existing enterococci.

Handling and preparation of each sample was done according to A.P.H.A. (1978).

Enumeration and isolation of enterococci

Enterococcus selective differential agar medium was used for enumeration according to EFTHYMIOU et al. (1974). Colonies were picked up for further confirmation according to published procedures (BAILY & SCOTT, 1974 and EFTHYMIOU et al. 1974).
RESULTS

All results obtained from the examined samples of milk powder, baby foods, ice-cream, process- ed cheese and table butter are presented in Tables (1-3).

DISCUSSION

Results obtained and recorded in Table 1 point out that enterococci were present in 9 (40.91), 14 (70%), 18 (81.82%), 12 (54.55%) and 14 (87.5%) of the samples of milk powder, baby foods, ice-cream, processed cheese and butter respectively. Enterococci were previously isolated from milk products by EFTHYMIOU et al. (1974), ALEKSIEVA (1976, 1977), SALLAM (1979) and BATISH et al. (1982). Table 2 shows the maximum, minimum and average counts of enterococci recovered from all examined samples.

In food microbiology, Streptococcus faecalis and Strept. faecium are of importance (FAO, 1979). The incidence of Strept. Faecalis and Strept. faecium are presented in Table 3. These organ- nisms are known to be causative agents of infection in human beings and animals. Presence of enterococci in foods is indicative of contamination from faecal sources (ANGELOTTI et al. 1963 and BROOKS, 1974).

It is worth mentioning that milk products improperly handled provide a ready medium for transmission of enterococci to consumers. The value of enterococci counts as a sanitary index for dairy products was emphasized.

Table (1)
Frequency distribution of enterococci in dairy products.

<table>
<thead>
<tr>
<th>Products</th>
<th>No. of samples examined</th>
<th>+ve samples</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk powder</td>
<td>22</td>
<td>9</td>
<td>40.91</td>
<td></td>
</tr>
<tr>
<td>Baby foods</td>
<td>20</td>
<td>14</td>
<td>70.00</td>
<td></td>
</tr>
<tr>
<td>Ice-cream</td>
<td>22</td>
<td>18</td>
<td>81.82</td>
<td></td>
</tr>
<tr>
<td>Processed cheese</td>
<td>22</td>
<td>12</td>
<td>54.55</td>
<td></td>
</tr>
<tr>
<td>Table butter</td>
<td>16</td>
<td>14</td>
<td>87.50</td>
<td></td>
</tr>
</tbody>
</table>

ENTEROCOCCI IN DAIRY PRODUCTS

Table (2)

Enterococci count/gm. or ml. in examined samples

<table>
<thead>
<tr>
<th>Products</th>
<th>Min.</th>
<th>Max.</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk powder</td>
<td>100</td>
<td>86 x10</td>
<td>32.1 x10</td>
</tr>
<tr>
<td>Baby foods</td>
<td>100</td>
<td>73.2 x10^2</td>
<td>80.4 x10^2</td>
</tr>
<tr>
<td>Ice-cream</td>
<td>80</td>
<td>27.2 x10^3</td>
<td>33.6 x10^3</td>
</tr>
<tr>
<td>Processed cheese</td>
<td>200</td>
<td>24.3 x10^3</td>
<td>47 x10^3</td>
</tr>
<tr>
<td>Table butter</td>
<td>100</td>
<td>62 x10^3</td>
<td>130.7 x10^3</td>
</tr>
</tbody>
</table>

Table (3)

Incidence of Strept. Faecalis and Strept. faecium in examined samples

<table>
<thead>
<tr>
<th>Products</th>
<th>No. of samples examined</th>
<th>+ve Strept. Faecalis</th>
<th>+ve Strept. Faecium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk powder</td>
<td>22</td>
<td>9 40.41</td>
<td>2 9.09</td>
</tr>
<tr>
<td>Baby foods</td>
<td>20</td>
<td>14 70.00</td>
<td>4 20.00</td>
</tr>
<tr>
<td>Ice-cream</td>
<td>22</td>
<td>18 81.82</td>
<td>10 45.65</td>
</tr>
<tr>
<td>Processed cheese</td>
<td>22</td>
<td>12 54.55</td>
<td>3 13.64</td>
</tr>
<tr>
<td>Table butter</td>
<td>16</td>
<td>14 87.50</td>
<td>4 25.00</td>
</tr>
</tbody>
</table>

REFERENCES


