مذي تواجد الميكروبات العصوية القولونية
في اللحن الخمام بمحافظة سوهاج
فوزي أبو الخير، توفيق اليسويني، حسن جاد الرب
تتم جمع 4 عينة لين طازج من أسواق مدينة سوهاج لعزل وعد الميكروبات العصوية القولونية. وقد أظهرت النتائج أن متوسط العدد الكلي لهذه المجموعة من الميكروبات في عينات اللبن المأخوذة من الباعة المتجلبون و محلات بيع اللبان 29100 في التوالي، بينما كان متوسط عدد العينات السابقة هو 234 في التوالي.

تم عزل الميكروبات التالية وهي:
E.coli, Enterobacter spp., Klebsiella spp., and Citrobacter spp.

بنسب مختلفة.

خلصت الدراية على تواجد تلك الميكروبات بأعداد كبيرة في اللبن كدليل على الاتكال في الاشخارات الصحية السليمة الواجب اتخاذها أثناء توزيع اللبن.
INCIDENCE OF COLIFORM ORGANISMS
IN RAW MILK IN SOHAG CITY
(With 3 Tables)

By
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SUMMARY

A total of 40 raw milk samples (20 each from street vendors and dairy shops) were collected from Sohag City markets for enumeration and isolation of total and faecal coliform organisms.

The results obtained revealed that the mean total and faecal coliform count/ml in examined samples of raw milk collected from street vendors and dairy shops were 1.29x10^6, 3.4x10^5, 6.0x10^5 and 2.4x10^4, respectively. E.coli, Enterobacter, klebsiella and Citrobacter spp.s could be isolated from the examined samples of raw milk in varying percentages. The results achieved in this study proved that raw milk in Sohag City has been produced and handled under neglected hygienic measures.

INTRODUCTION

One of the most important factors particularly when the purpose of the examination is to estimate the degree of faecal contamination in raw foods is the relation of numbers of faecal coliform to the total coliform count. The importance of coliform organisms in milk and its products have probably received more attention than most other groups of bacteria (DUCOTE et al. 1979, PANDEY and MANDAL; 1980, ALEKSIIEVA and KRUSHOV 1981, DESAL and NATARJAN 1981, PECHOVA and LUKOSOVOE 1981), moreover from the public health point of view enteropathogenic serotypes of E.coli has been implicated in human cases of gastroenteritis, epidemic diarrhea in infants, summer diarrhea in children as well as many cases of food poisoning (ROGERS and KOEGLER 1961, TULLOCH et al. 1973 and FANTASIA et al. 1975).

As coliform count are useful as an index of raw milk quality, therefore the present work was planned to investigate the incidence of coliform organisms in milk in Sohag City.

MATERIAL and METHODS

A total of 40 random samples of raw milk marketed in Sohag City (20 each from street vendors and dairy shops), were collected in clean, dry, sterile and stoppered bottles. The samples were dispatched to the laboratory with a minimum of delay. For bacteriological

examination, handling and preparation of the serial dilutions as well as enumeration of total coliform were conducted according to the technique recommended by A.P.H.A. (1978).

Estimation of faecal coliform count done according to EDMUNDM and THOMAS (1979). Identification of the isolated organisms were done according to its morphological characters and biochemical reactions. FINEGOLD and MARTIN (1982).

RESULTS

The obtained results are represented in table 1, 2 & 3.

DISCUSSION

It was evident from the results recorded in table (1) that all examined milk samples from street vendors proved to be contaminated with coliform organisms. The maximum count/ml was 1.90x10⁴, the minimum was 20, with a mean value of 1.29x10⁴ ± 0.54x10⁴. The highest frequency distribution (55%) lies within the range 10⁴ - 10⁵, while in samples collected from dairy shops, the maximum count/ml was 1.11x10⁵, the minimum was 80/ml with a mean value of 6.0x10⁴ ± 5.5x10⁴. The highest frequency distribution lies within the range 10⁴ - 10⁵ (Table 2).

Concerning faecal coliform count in milk samples collected from street vendors, it is evident that 90% of the examined samples were proved to be contaminated with faecal coliforms (Table 1) with a count of 1.27x10³/ml as a maximum, 10/ml as a minimum with a mean value of 3.4x10² ± 0.973x10². The highest frequency distribution (61.11%) lies within the range 10⁰ - 10¹, while the maximum coliform count/ml of milk samples collected from dairy shops was 2.1x10⁶, the minimum was 20 with a mean value of 2.4x10⁴ ± 1.31x10⁴. The highest frequency distribution lies within the range 10⁶ - 10⁷ (Table 2).

The presence of high numbers of coliform and faecal coliform organisms in raw milk samples indicates that such milk is produced under neglected sanitary measures. The comparatively lower counts recorded by GHIZVINJAN et al. (1972), MISHRA et al. (1978) and DUCOTA et al. (1979), may be attributed to the advanced hygienic measures adopted during production and handling of milk in different localities. Higher counts were also reported by ANON (1970), KALYANOV and GOGOV (1977).

From the results recorded in table (3) it is evident that 78 (60.93%) out of 128 isolated strains were proved to be E.coli, while the other isolated strains were identified as 34 (26.56%) Enterobacter spp., 6 (4.70) Klebsiella spp. and 10 strains (7.81%) as Citrobacter spp. Similar species could be isolated by AL-ASHMAWY et al. (1977), GORG et al. (1977), and MISHRA et al. (1978). On conclusion the information given by the results reported herein pointed out that, the sanitary control adopted during production, handling and distribution of raw milk in Sohag City are neglected. Therefore strict hygienic measures and observation by specialists in dairy farms, collecting centers and dairy shops are highly recommended.
COLOFORM ORGANISMS IN MILK

REFERENCES


<table>
<thead>
<tr>
<th>Organisms</th>
<th>No. of samples examined</th>
<th>No. of samples + ve</th>
<th>% + ve</th>
<th>No. of Min.</th>
<th>No. of Max.</th>
<th>Mean ± S.E.M.</th>
<th>D.S. = dairy shops</th>
<th>S.Y. = street vendors</th>
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<td>Total coll.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>F. a. aboul-kheir et al</td>
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Table (1)
Coliform organisms in milk

Table (2)
Frequency distribution of examined milk samples based on their total coliform and faecal coliform counts

<table>
<thead>
<tr>
<th>Interval</th>
<th>Street Vendors</th>
<th>Dairy shops</th>
<th>Street Vendors</th>
<th>Dairy shops</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>No. of samples</td>
<td>%</td>
<td>No. of samples</td>
<td>%</td>
</tr>
<tr>
<td>1-10^2</td>
<td>1</td>
<td>5</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>2-10</td>
<td>5</td>
<td>25</td>
<td>4</td>
<td>45</td>
</tr>
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<td>4-6</td>
<td>3</td>
<td>15</td>
<td>8</td>
<td>40</td>
</tr>
<tr>
<td>6-8</td>
<td>11</td>
<td>55</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>20</td>
<td>18</td>
<td>16</td>
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Table (3)
Distribution of coliform organisms isolated from examined samples of raw milk

<table>
<thead>
<tr>
<th>Isolated organisms</th>
<th>Street Vendors Strains</th>
<th>Dairy shops Strains</th>
<th>Total Strains</th>
</tr>
</thead>
<tbody>
<tr>
<td>E. coli</td>
<td>31</td>
<td>48.44</td>
<td>73.44</td>
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<td>Enterobacter spp.</td>
<td>20</td>
<td>31.25</td>
<td>21.87</td>
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<td>Klebsiella spp.</td>
<td>3</td>
<td>4.69</td>
<td>4.69</td>
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<tr>
<td>Citrobacter spp.</td>
<td>10</td>
<td>15.62</td>
<td>-</td>
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<tr>
<td>Total isolates</td>
<td>64</td>
<td>100.00</td>
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