EVALUATION OF CONTAMINATION STATUSE IN IMPORTED AND LOCAL TABLE EGGS

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ABSTRACT
This study was conducted to detect the contamination in the local and imported table eggs, and the comparison between them of contamination. Samples were collected from local markets taking 60 samples of both types (30 local eggs and 30 imported eggs) these samples were sent to a laboratory of microbiology / College of Veterinary Medicine / University of Baghdad .then taking swabs from the different of eggs shells samples for both types (local and imported eggs) then bot swabs in nutrient broth to be grown bacteria in the nutrient broth. (After that samples were taken from the nutrient broth) and then cultured in the nutrient agar, macconky agar. The results showed the presence of bacterial growth (E. Coli gram negative on the macconky agar) in the samples that have been taken from local eggs. While the results showed the samples that were taken from imported eggs indicate the presence of bacterial growth (bacteria gram positive. Staphylococcus spp., (Streptococcus spp.)) as well as bacteria bacilli gram negative growth on the nutrient agar. While the results of bacterial count showed the presence of bacterial growth more in imported eggs compared to local eggs ,Imported eggs(B) (8.6 × 10^6 log cfu / ml). Compared to the totals local egg (A) where the results (2.1 × 10^4 log cfu / ml). (Table no.1) .The results appear of high contamination in imported eggs compared with local eggs.

Ke words: local market, imported, veterinary, bacteria

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INTRODUCTION

Foodborne infection could be a noteworthy open wretchedness and furthermore the principle purpose behind diarrheic illnesses moving all created and creating nations (2). Table eggs zone unit the least difficult and basic supply of sustenance, containing quality protein, fundamental amino acids, basic vitamins and minerals required for a good wellbeing (14). Asia is that the biggest egg producing area with 65% of world yields (7). A joined offer of egg creation from China, Asian country and Japan territory unit over 46th. Notwithstanding, China itself is that the most loved of the most astounding 10 nations that have given 38th of the world’s eggs request in 2011, (16) Eggs have normal weapon against the polluting organisms, similar to fingernail skin, Ca relentless shell and shell film (11). The egg white contains numerous fixing proteins that have antimicrobial properties, especially the lysozyme. Ovomucoid is another proteinase that represses the energy of microorganism to utilize the protein in egg whites. Likewise, the pH in egg white that is concerning 9–10 and furthermore the viscosities of the fixing don't appear to be suitable for microorganism development (8). Egg might be defiled at each egg shell and egg contents by variety of organisms with a wide range of pathogens like Campylobacter jejuni, Escherichia coli, and especially enterobacteria(3)(18). Staphylococci square measure commonest bacterium debasing eggshells. Sullying is a considerable measure of most likely associated with split egg, messy shells and capacity in tainted environment. It might be sullied all through development and birthing technique (1) The regular covering tainting expanding the probabilities of egg substance pollution by infiltration (10). Microorganism tainting will occur at 3 fundamental segments of (egg supplement, egg whites and shell film/egg shell). Salmonella enteritidis is prepared to assault the cells of the follicles previously natural process and increase themselves when 2 h of contamination (10). Eggs square measure thought of to be a medium to okay sustenance for foodborne disorder which may wind up plainly polluted with bacterium, similar to enter bacteria and option enteric pathogens (5). the premier regular foodborne pathogens related with sustenance of creature cause unit enteric microscopic organisms, Campylobacter, listeria, staph aureus and E. coli O157 (9). In current examination a review was directed for identification of oxygen consuming creature stack and conjointly the pathogens on eggshells and in egg substance. The pathogens were what's more inspected for its antibiotic gram think about. The objective of this investigation was to 1-decide the sullying of egg shell. 2-Copmared defilement amongst local and outside eggs. 3-Total life form check assurance ..

collection: A total of 60 random chicken table eggs as a sample (30 local eggs, 30 imported eggs) were collected from markets in Baghdad town. The samples were collected in sterile Plastic instrumentality and transported aseptically to the laboratory of dept. Microbiology/ within the college of veterinary medicine, University of Bagdad, and divided into 2 groups (local and imported groups). Each group of eggs examined.

Preparation of samples for microbiological examination :- There were 2 groups of the examined samples:-

Total bacterial count determination:- For surface bacterial contamination, a swab technique was applied. (12). The surface of whole egg was swabbed aseptically with sterile cotton swab then genteele on nutrient agar and incubated aerobically at 37°C for 24 hrs. For the enumeration of bacterium in egg shell, customary pour plate technique is employed .The samples were 1st swaybacked in 0.1% W/V buffered peptone water then incubated aerobically at 37°C for 24 hrs.. 1ml of genteele broth was serially diluted in 9ml (0.1%wt/v) buffered peptone, Take 0.1ml of 10⁻⁴, and 10⁻⁶ dilutions in (duplicate) of inoculant within the petri plates to that culture medium having temperature around 45 -50°C and blend totally by rotating plate dextral and anticlockwise for five times .Allow the plates to solidify and so keep the plates for incubation at 37°C for 24-48 hrs. Colonies once period were counted.

Total Count of bacterium (CFU)/ml =mean colony culture X dilute factor⁻¹.
Physiological and organic chemistry characteristics of check organism gram staining:
A clean glass slide was taken, a skinny smear of every culture was created and warmth mounted. The smear was accorded with crystal violet for one minute and washed with water. Then smear was flooded with Grams iodine for 30 seconds and washed with water, decolorized with 95th alkyl radical alcohol and washed with water in real time and flooded with safranine for 30 seconds and once more washed with water. The smear was ascertainment beneath the oil immersion objective.

RESULTS AND DISCUSSION
This results showed the presence of microorganism contamination in local and imported egg after it's been taking a swap from egg shells having done the event of bacterium within the (nutrient broth) and so placed in an exceedingly nutrient and Macconkey agar were development on agar Macconky agar as represented within the Figure (1) wherever the local eggs pollution was cleared bacterium (E. coli bacilli gram negative), results showed the presence of bacterial growth evident at the local egg shells bacterium from culture medium (bacillus spp.) Figure (2) whereas showed contamination with imported eggs results the presence of bacterial growth on the Agar (nutrient) it had been clearly the sort of contamination with bacterium (staphylococcus aureus) With relation to imported eggs, the results show the presence of microorganism growth and clear the sort of bacterium (staphylococcus & bacilli) Figure (3).while show bacterial contamination (streptococcus spp. gram positive) Figure (4). Regarding the microorganism count local eggs and imported Table (1) wherever the results showed the presence of microorganism contamination is clear in imported eggs wherever the bacterial count for totals imported eggs (B) (8.6 x 10^6 log cfu / ml)and count of E. coli. (4.26 ± 0.096) Compared to the totals local egg (A) wherever the results (2.1 x 10^4 log cfu / ml) and count of E. coli (2.23 ± 0.036) respectively. Total ranges of bacterial were isolated from the samples eggshells. The egg shell isolates were known as happiness to the Enterobacteriaceae family. The 1 isolates were from local egg and 3 from imported egg, severally, wherever the 2 isolates were Gram’s positive and one Gram’s negative. Gram’s positive bacterium will tolerate dry and harsh conditions and is gift in mud, soil and excretion that is that the major reason of its presence on eggshells (6). The total aerobic count vary of bacterium on eggshell was (2.1x10^4 log cfu/ml) in local egg, whereas (8.6x10^6 log CFU/ml) in imported egg samples. Only 1 egg sample contents from imported egg was found contaminated with 3.0 log CFU/ml of aerobic bacterium. All isolates were happiness to totally different genus, enclosed E.coli, staphylococcus spp., strep spp., Bacillus spp., Staphylococcus spp. was preponderantly found associated to eggshell. (4)Rajmani reported bacterium of an equivalent genus from eggs in their studies. Abdullah (1) reported the very best degree of eggshell contamination with gram-positive bacterium notably coccus spp. foreign Eggs in clean surroundings contained a lot of bacterium than native eggs in dirty surroundings (17). The encompassing surroundings and storage condition together with temperature and storage length will influence the amount of bacterial contamination (19). Board and Tranter (7) reported that the amount of contamination on egg shells have a good vary of variation from log 2 to log 7 colony forming unit (cfu) of bacterium per shell. during this study the samples from imported egg were found preponderantly contaminated with aerobic bacterium. Our results are agreement with the results of (15) Less contamination of E. coli spp. was found in egg shell in local egg compared with imported eggs during this study. (Table 2)

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Chicken egg samples</th>
<th>NO. of samples</th>
<th>Means of total bacterial count log c.f.u. / g.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Local A</td>
<td>10</td>
<td>2.1 x 10^4</td>
</tr>
<tr>
<td>2</td>
<td>Imported B</td>
<td>10</td>
<td>8.6 x 10^6</td>
</tr>
</tbody>
</table>
Table 2. The means count of *E. coli* in local and imported Chicken egg shell samples

<table>
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<tr>
<th>Treatment</th>
<th>Chicken egg samples</th>
<th>NO. of samples</th>
<th>The Means count of <em>E. coli</em> log c.f.u. / g. Mean ± S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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</tbody>
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Figure 1. Local and imported egg appear *E. coli* gram negative bacilli from macconkey agar. (100X)

Figure 2. Local egg appears bacillus spp. we see some bacteria from spore. (100X)
It was closed inside the examination that eggshells are prevalently defiled with Gram's certain and Grams negative bacterium. The pollution was to a great extent from cultivating environment and capacity conditions. Amid this examination found the local eggshells were less defiled when contrasted with imported eggs. Bacterium likes Bacilli, staphylococcus spp. what's more, streptococcus spp. found in imported eggs.

REFERENCES
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