

Is Yoghurt A Source of Gastroenteritis?

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Introduction

Yoghurt is a dairy product which is consumed in almost every house in our country. It is produced with a yoghurt starter, which is a mixed culture of streptococcus thermophilus and lactobacillus bulgaricus in a 1:1 ratio. Freshly produced yoghurt typically contains 10^{10} organisms per gram¹. The coccus grows faster than the rod and is primarily responsible for the acid production, while the rod adds flavour and aroma. The associated growth of the two organisms results in lactic acid production at a rate greater than that produced by either when growing alone. Good yoghurt keeps well at 5°C for its 2 weeks. An area densely infested with flies especially after monsoons, is heavily contaminated with bacteria causing gastroenteritis. This survey was conducted just after the rainy season, to determine whether yoghurt contaminated by flies could cause gastroenteritis.

Materials, Methods and Results

One hundred samples of yoghurt were collected from various areas of the city (Federal B area, North Nazimabad, Liaquatabad, Malir, Saddar, Gulshan-e-Iqbal and Clifton) housing different socioeconomic classes. 100 gms of yoghurt samples were taken in polythene bags supplied by the shop keeper. It was brought to the laboratory within an hour. Here it was measured in a clean beaker and its pH noted. It was then immediately and directly inoculated on Blood Agar, MacConkey Agar and Sabourauds agar. The plates were incubated at 37°C overnight. Next morning plates were taken out and types of colonies noted. A Gram stain was made from the colonies and biochemical identification was set up². Out of one hundred samples only two showed few colonies of Coliforms four were positive for remaining samples showed normal flora of yoghurt i.e., Streptococcus thermophilus and Lactobacillus bulgaricus.

Types of growth in 100 sample of yoghurt

	Lactobacilli . spp	Streptococcus: spp	E. coli	Yeast
Culture Positive	100	100	2	4

Comments

Samples were collected in The month of August soon after the rainy season in Karachi. At this time there were water ditches throughout the city specially in the slums or areas with poor municipal hygiene which became a perfect breeding ground for orthopods like 'musca domestica' or common house fly. It is known that flies are vectors for a number of enteric diseases like bacillary dysentery (shigella), cholera, typhoid and paratyphoid (Salmonella) and Amoebic dysentery. As noted in this

study, most of the shops were not netted and had unhygienic surroundings. The yoghurt pot was inadequately covered, most of the time and flies were seen sitting directly on the yoghurt surface. The polythene bags were also very dirty. Even in this deplorable situation yoghurt culture did not show growth of any enteric bacteria. Only two samples grew few colonies of *E. coli*, suggesting contamination from the collecting bags or during sample handling. The reason for this seems to be the acidic pH(3.50-4.40) of yoghurt produced by the two bacteria which prevents the growth of other bacteria. The antimicrobial properties of yoghurt was examined by Goel⁴. He noted a sharp decline in numbers of coliforms he inoculated in yoghurt after 24 hours. In conclusion it can be assumed that plain yoghurt is safe even when sold in unhygienic conditions and that it does not contribute to the spread of gastroenteritis.

References

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