

Bacteriological Profile of Street Foods in Mangalore

Dear Editor,

Street food refers to a variety of food and beverages prepared and sold by vendors in streets and other public places for immediate consumption. Selling street foods is an important occupation in many cities in developing countries. As hygienic standards may not be maintained during the preparation of these food items, there is always concern about their safety, quality and hygiene.¹ We studied the bacteriological profile of street foods in Mangalore, south India.

Different locations in Mangalore were selected. Data regarding the items sold, method of preparation and serving, hygiene and method of washing the utensils were collected, maintaining total confidentiality. Samples of about 50 grams of food were collected in separate

sterile containers and transported to the laboratory on ice within one hour of collection. Portions of food weighing 10 grams were diluted 1 in 10 using 90 mL phosphate buffered saline (pH 7.3). Further tenfold dilutions were made and examined by means of the surface viable count by spreading method on blood agar and MacConkey's agar.² Colony count and identification of bacteria were performed. Tests for food-poisoning bacteria was done by means of standard methods.³

Out of 60 street food samples tested, 56 (93%) were contaminated with bacteria (Table). Coliform count of > 10⁵ cfu/g was detected in 21 samples. All the items which had high bacterial count were prepared and served in places where the washing of hands, utensils and dishes was done in buckets.

Table: Bacteriological profile of street food

Food	No. tested	No. contaminated	Number of samples contaminated				
			<i>E. coli</i>	<i>K. pneumoniae</i>	<i>E. faecalis</i>	<i>S. aureus</i>	<i>P. aeruginosa</i>
Bhelpuri	20	20	7	12	1	1	12
Masalapuri	10	10	3	4	1	1	5
Panipuri	10	9	3	3	1	0	5
Sevpuri	5	5	1	1	1	0	2
Noodles	5	3	0	0	0	0	3
Fried rice	5	3	0	0	1	0	2
Lime rice	5	4	1	1	0	0	2
Total	60	54	15	21	5	2	31

The present study revealed bacterial contamination of street foods. Presence of coliforms and enterococci indicate faecal contamination of the food suggesting possible risk of infection involved in consumption of such foods. Presence of *S. aureus*, an enterotoxin producer, can cause serious health problems. *Pseudomonas aeruginosa*, another bacterium detected during the present study, is an important opportunistic pathogen and can cause food spoilage.³ Washing of the hands, utensils and dishes in same bucket increases the chances of contamination. Food may also get contaminated if exposed to dust and flies. Health education for vendors and strict implementation of hygienic standards may help reduce contamination of street foods.

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References

1. Mensah P, Yeboah-Manu D, Owusu-Darko K, Ablordey A. Street foods in Accra, Ghana: how safe are they? *Bull WHO* 2002; **80**:546-554.
2. Brown R, Poxton IR. Centrifuges, colorimeters and bacterial counts, Chapter 48. In: *Mackie and McCartney Practical Medical Microbiology*, 14th ed, Collee Jg, Fraser Ag, Marmion BP, Simmons A (Eds). (Churchill Livingstone, New York) 1996: 845-852.
3. Senior BW. Examination of water, milk, food and air. Chapter 51. In: *Mackie and McCartney Practical Medical Microbiology*, 14th ed, Collee Jg, Fraser Ag, Marmion BP, Simmons A (Eds). (Churchill Livingstone, New York) 1996:883-921.

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