

Microbial Profile of Sugarcane Juice Sold at Rohtak, Haryana with Special Reference to Bile Esculin Azide Medium

Sir,

Sugarcane juice is a common man's refreshing beverage and it is sold at most of the public places at reasonable prices. Hygienic standards are not maintained by the sellers and no pasteurized commercial sugarcane juice is available in our region. Many outbreaks of food borne diseases have been reported due to consumption of unpasteurised and contaminated juices.^[1] Various pathogenic organisms like *Escherichia coli*, coliforms, enterococci, *Salmonella* spp., and *Vibrio cholerae* have been isolated from sugarcane juice by several workers.^[1-3] The present study was carried out to study the bacteriological profile of sugarcane juice sold at

roadside at Rohtak, Haryana and the use of bile esculin azide medium for isolation of enterococci.

Thirty samples of fresh sugarcane juice were collected in sterile containers and transported to the laboratory in ice boxes. All the samples were diluted 10-folds with phosphate buffered saline. Surface plating was done on blood agar, MacConkey's agar, XLD, and bile salt agar and organisms were identified by standard microbiological procedures.^[4] For isolation of enterococci bile esculin azide membrane nutrient pad medium (Hi Media) was used. The test samples were filtered through a sterile membrane filter of pore size 0.22 µm. The nutrient pad was rehydrated with sterile distilled water. The membrane filter was aseptically removed and placed on the rehydrated nutrient pad and incubated overnight. Brownish black colonies suggested the presence of enterococci.

Out of the 30 samples tested, 27 (90%) were found to be contaminated with bacteria. The bacterial count for all the isolates was $>10^5$ cfu/ml. Enterococci (55.5%) and *E. coli* (48.1%) were the predominant isolates followed by *Citrobacter* spp. (18.5%), *Klebsiella* spp. (18.5%), and *Enterobacter* spp. (14.8%). In 15 samples a mixture of two organisms were isolated.

In our study, the presence of *E. coli*, coliforms, and enterococci in significant number suggests faecal contamination of samples. This much bacterial contamination of sugarcane juice is a matter of great concern. It was noticed that hygienic measures were poorly implemented. During the preparation, bare hands were used for handling the ice and sieving of juice. The utensils and glasses were washed just by dipping in the same water.

Bile esculin azide medium is a selective medium for detection and enumeration of enterococci from water, food and other samples. It is a very good medium for selective isolation of enterococci from the samples where a mixture of organisms is suspected.

To conclude, our study emphasizes on strict implementation of hygienic measures by the food handlers and their mandatory screening for bacterial carriage and infection.

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