



Straight to street food safety

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Abstract

Foods and beverages which are prepared & sold by the sellers on places like streets, festival areas & consumed by the consumers on the run is called street food. These foods are alternatives to homemade food & more and more affordable than the foods from restaurants. In many countries street food make an important contribution to employment household, revenue, food security and help to meet the challenge of feeding urban population. However in taking of all the tasty road side food items are questionable & sometimes very much injurious to health, because these foods not properly cooked, preserved or served, as a result there is huge chance of microbial contamination & food borne illness. So that the hygiene maintenance of street food is a very important issue of food safety today.

Keywords: street food, homemade food

Introduction

The street food sectors offers ready-to-eat foods & beverages that are prepared and sold by itinerant or stationary vendors specially on streets and in other public places.

Need of Street Food

The changes taking place in peoples' life styles have caused the habit of eating outside to evolved because the consumer didn't have time for cooking at home, the changes in consumption habits of the society, cultural interactions, fast living & contribution of women to work life are influencing and changing the nutrition style in crowded cities (Cuneo 1998, Madran 1999). So today people prefer to buy street food to fulfil their nutritional need outside the home, street food are less expensive & can able to give a lots of varieties to choose an appropriate combination of foods.

Good Happenings Turns To Worse - Why?

Street food especially show the eating habits of people of people limits in big cities. Approximate 2.5 billion people around the world consume street food, everyday food sold on the street are the integral part of countries casine. They play important role with local cuisine in preventing cultural & social heritage. Street food attracts the tourists towards new varieties, different test & this supports countries tourism & source of income. But beside all these good happenings street food consumption in some times cause food safety risks and food borne illness. Some of the illness are causing due to-

- Lack of knowledge of street vendors.
- Employing of children as workers.
- Selling food beside busy road.
- Unhygienic condition of premises including sanitization (accumulation of waste on street & blocked drain)

Different Causes of Food Contamination

- Food fallen to the surroundings
- Dirty hands during food preparation or consumption

- Leafy greens and ground fruits
- Food washed with contaminated water
- Unclean markets, stalls and utensils
- Meat wiped with cloths used to clean working surfaces & kitchen utensils
- Fruits and vegetables grown in contaminated soil

Street-Vended Foods May Pose Significant Public Health Problems Due To

- Lack of basic infrastructure and services, such as potable water supplies.
- Difficulty in controlling the large numbers of street food vending operations because of their diversity, mobility and temporary nature.
- Insufficient resources for inspection and laboratory analysis.
- General lack of factual knowledge about the microbiological status or the precise epidemiological significance of many street-vended foods.
- Poor knowledge of street vendors in basic food safety measures.
- Inadequate public awareness of hazards posed by certain street foods.

Hygienic Handling of Sources of Contamination-

1) Raw Materials

Food is susceptible to contamination at all stages of the food chain. Raw materials are therefore important to the safety of street-vended food because of the biological, chemical and physical hazards that may be introduced to the vending operation and which may persist through preparation and processing.

Raw materials also need to be examined for the presence of physical hazards and gross chemical contamination prior to purchase (although it should be noted that chemical contamination can rarely be detected without laboratory analysis). Raw materials contaminated with obvious physical

hazards should be avoided or the hazards removed. Control of chemical hazards in raw materials is often extremely difficult for street food vendors. Attention may be given to obtaining food colours and other additives from authorized dealers (where they exist), purchasing raw materials from reputable suppliers and examining foods for possible visible signs of chemical contamination.

- It should be assured that raw materials are not further exposed to contamination from accidental exposure to chemicals or growth of pathogens and toxin production during transport and storage. To protect against such hazards:
 - a. Materials, which will be consumed in their raw state, should be transported and stored separately from other raw materials and non-food items.
 - b. Materials should be transported in such a way as to limit pathogen growth or toxin formation by effectively controlling time of transportation and the temperature and water activity of such raw materials.

2) Water & Ice

Water is a critical raw material in many food vending operations. So-

- Water used for drinking & preparation of beverages should be potable.
- Water used for drinking & preparation should be clean & not reused.
- Water used for ice making should be clean & not reused.

3) Preparation and Processing

Consumption of raw or inadequately processed animal foods may prove a significant public health risk as such foods are frequently contaminated with pathogens and occasionally with toxic chemicals. Similarly, vegetables, fruits and grains may carry hazardous contaminants.

Preparation and processing should:

- Be adequate to eliminate or reduce such hazards to an acceptable level;
- Prevent growth of pathogens, production of toxic chemicals and the introduction of physical hazards; and
- Ensure that foods are not contaminated.

An important principle in preparing and processing food is to avoid direct and indirect contact between raw and cooked or prepared foods which will be consumed without further heating. Indirect contact may be caused by improper storage practices, unclean hands and unwashed or soiled equipment and surfaces such as cutting boards and knives.

- Foods to be eaten raw (e.g. salads and peeled or cut fruit) should be prepared with special attention to cleanliness. Grains (e.g. rice, pulses, beans, etc.), vegetables and some fruits (especially if they are to be consumed raw) should be washed sufficiently with safe water in an effort to reduce contamination on their surfaces to an acceptable level.
- If frozen foods are used it may be necessary to thaw them before cooking in order to ensure adequate heat penetration. Thawing may be omitted in special cases where the manufacturer recommends doing so.
- If food is processed by heat treatment (e.g. frying, grilling, baking, etc.) it should be thoroughly cooked, which means

that the temperature of all parts of the food reaches at least 70°C. The adequacy of the cooking process may be monitored by the observation of temperature, boiling (bubble formation) or changes in texture and colour.

4) Transportation, Handling and Storage of Prepared Food

Proper transport, handling and storage of prepared food is often critical to the safety of street-vended food. Improper practices may lead to toxin formation, pathogen growth or recontamination.

- The vehicle used for transport should be clean and should not carry animals, toxic substances or contaminating materials along with the prepared food, unless equipped with a structural barrier to prevent cross-contamination.
- The time required to transport food between the preparation and vending units should be such that bacterial proliferation does not reach hazardous levels under the conditions of transport and eventual sale. Problems of transport are minimized if the point of sale is near the place of preparation.
- Prepared foods served hot should be kept at a temperature of at least 60°C to prevent microbial growth, particularly if the sales period extends over 4-5 hours.
- Prepared foods which are to be served cold and which may support the growth of pathogens should, if cooling capacity (ice of appropriate quality, refrigeration etc.) is available, be stored at less 10°C.

5) Vending Units, Equipment, Utensils

The design, construction & maintenance of vending units, equipment & utensils is also important to food safety.

- Vending units should be designed & constructed so that they are easily cleaned & maintained.
- Equipment, utensils & other containers should not have pitted, grooved or sculpted surfaces. They should not be used for purposes other than cooking, processing or keeping food.
- Equipment, utensils & other containers should be made with non-corrosive materials.
- Veg and non-veg products should be made using separate equipment & utensils.

6) Food Handlers

- Food handlers should stop their business promptly if at any time they suffer from jaundice, diarrhoea, vomiting, fever, sore throat or infections.
- They should wear clean & proper clothing after handling raw food of animal origin, after using toilet or after handling garbage.
- In the preparation & sale of food, food handlers should avoid some unhygienic practices such as
 - ❖ Chewing or smoking tobacco, chewing beetle nut or chewing gum.
 - ❖ Touching mouth, tongue, nose, eyes etc.
 - ❖ Splitting, sneezing, coughing near food.
- avoid contamination of food with physical hazards by-
 - ❖ careful food handling practices
 - ❖ protecting food from environment
 - ❖ removing jewellery prior to making and handling of food

Cleaning and Sanitizing

Vendors should employ cleaning procedures which ensure that vending unit, equipment and utensils are properly clean. Where sanitizing is required to control hazards, vendors should be educated regarding adequate steps and encouraged to adopt a suitable cleaning and sanitizing programme.

Waste Disposal and Pest Control

All waste should be handled and disposed of in such a manner as to avoid contamination of food and water and the environment. In particular, access to food waste by pests (insects and rodents) as well as by animals (dogs and cats) should be avoided.

The following types of waste should, if possible, be disposed of separately:

- a. Liquid waste (except oil and fat) should be emptied into the nearest sewer or drain. Some form of a trap should be used to ensure that only liquid waste is discharged into the sewer or the drain.
- b. Remains of food may be separated and kept for feeding animals. Animals should not, however, be allowed to eat from utensils used to serve customers.
- c. Other solid waste should be kept in covered containers to be removed at least once daily by the public garbage collection system. The containers should be cleaned daily.
- d. Used oil and fat may be stored and re-processed for animal feed.

Conclusion

Street food vendors should maintain 5Cs of food safety ie – Clean, Cover, Cook, Chill & Cross-Contamination. In many case studies it is detected that food safety knowledge & application of food vendors are of low level. They did not have adequate information about processing, serving & handling of food. So, Educational programme, training or awareness campaign required to enhance their knowledge. Beside that proper sanitization, waste disposal & pest control facilities should be enhanced. Successful hygiene knowledge & education is required for preventing food borne diseases.

References

1. Food Safety Handbook- Ronald. H. Schmidt & Gary E. Rodrick
2. Street Food Consumption In Terms Of Food Safety & Health-Aybuke Ceyhum Sezgin, Nevin Sanher. Journal of Human Science, 2016, 13(3).
3. Training Manuals For Street Food Vendors-Bhutan Agriculture & Food Regulatory Authority, Ministry of Agriculture & Forests.
4. Essential Safety Requirements For Street Vended Food-Food Safety Unit, Division Of Food & Nutrition, World Health Organisation.