FOOD SAFETY IN PUBLIC CATERING

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ICRISAT is a non-profit, scientific, agricultural research and training institute receiving support from donors through the Consultative Group on International Agricultural Research. Donors to ICRISAT include national governments and international agencies.

The Importance of Food Safety Systems

Because of rapid industrialisation and changing life styles, large-scale catering services which prepare and distribute food to the public have vastly increased. An unfortunate consequence of this development is the increasing incidence of foodborne disease. Although food technology methods have improved, similar advances in hygienic techniques have not been brought about in the subcontinent. Before setting up a catering unit, it is essential to fully understand the importance of food hygiene and the ways in which hygienic considerations affect the running of a kitchen. The aim should always be to ensure that only safe food is served.

To achieve food safety in institutional catering, food should not only be clean in the ordinary sense, but free of contamination. The likelihood of incidence of foodborne illnesses or poisoning is enhanced when food is prepared, cooked, and distributed on a large scale. High standards are therefore essential at all stages of food production (i.e. receiving of raw materials, storage, preparation and distribution of finished products).

Food Services at ICRISAT

Food Services at ICRISAT is a non-profit, self-sustaining unit. In order to cater to the complete needs of the Institute, the unit's infrastructure is large. Food services must handle the food requirements of national and international staff, short and long-term trainees, interns, research scholars, and visiting scientists. It must also cater to the needs of visitors, including Heads of State and other dignitaries from all over the world. Food Services is also responsible for all food activities for national and international workshops and seminars. Its primary objective is to provide high quality food and good service at low cost.

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ICRISAT has three large halls and a snack bar at the swimming pool. A variety of Indian, Western and Southeast Asian food is served to suit both ·ical and foreign tastes. The dining centres are designed with self-help afeteria service with both a la carte choices or preplated fixed meals. apart from the routine cafeteria operation, special events are catered, such s formal banquets, luncheons, dinners, and tea/coffee snacks in connection ith the workshops/seminars and visits of dignitaries. These events demand ersonalised service.

An Assistant Manager in charge of 65 personnel is responsible for the effective running of the Food Services Unit. He reports to the Manager of Housing and Food Services.

Special Problems

Various problems in institutional catering are:

- catering to different tastes and habits, meeting daily deadlines, and maintaining quality at low cost;
- constant access to suitable raw material;
- non-availability of trained manpower and unhealthy personnel practices

The Layout of the Food Production and Service Area

ICRISAT's food production area was designed with four basic aims:

- economy of operation time;
- economy of efforts;
- production of safe food; and
- cost effectiveness.

The three dining centres and the poolside snack bar are situated in three seperate buildings. Three well-equipped kitchens, which prepare and serve different types of meals, are attached to the dining centres. Maximum care is taken to maintain a high standard of hygiene in the layout and selection of equipment. There are seperate areas away from the main cooking areas for preparation of vegetable, fish, meat, and poultry. The dish washing facilities are seperate from the main preparation and cooking areas, and include hot and cold water pressure sprays(75 psi) and stainless steel sinks and racks. There are seperate areas for baking preparation of cold food. Stereo dishwashing machines have been to clean cutlery, crockery, and glassware (initially at 50-60° C and a spray at 70-80° C).

All work tables, shelves and cupboards are made of stainl The main kitchen which services 600 lunches daily, has been insta a 10,000 litre solar water heater which reduces the cost of provides ample water heated to 60° C.

The kitchens are well ventilated with evaporative cooling systems which allow a constant flow of fresh air into the klitchen. Cross ventilation is well maintained. For kitchen exhaust, a steel canopy is provided with large exhaust fans over the main cooking area, the baking oven and the dishwashing machines. The kitchen wash area walls are tiled to the ceiling and the floors have non-slippery tiles.

Two dining centers with individual kitchens are air-conditioned. An adequate drainage system is provided. Potable drinking water is available through ICRISAT's water filtration plant and bacteriological tests are carried out regularly. Separate walk-in coolers and deep freezers are provided. All doors leading to the outside are fixed with aircurtains to prevent intrusion of insects, odour, dust, etc.

Equipment

Maximum output and smooth flow of work are the main factors determining the types of equipment and their positioning. Optimal use can only be achieved if all equipment functions efficiently. Continuous maintenance is therefore critical.

The use of high standards of equipment in our service centers is justified for four reasons.

- Labour costs remain low
- Reliable performance is guaranteed.
- We can keep pace with demand.
- Hygienic conditions during food preparation are maintained.

Basic Questions to Ask when Preparing a List of Equipment

- How many people are to be served ?
- What sort of meals are to be served ?
- What length of service is required and at what times ?
- What quantities of food are needed ?
- What types of equipment are available ?

Our production areas and the dining halls are well equipped (e.g. heavy duty dough mixers, electric potato peelers, meat chopping machines, braising pans, jacket boilers, high pressure and low pressure burners, salamander boilers, grillers, baking ovens, thermostat-controlled stainless steel hot cases, micro-ovens, cold pans, bains-marie, slicing machines, etc., from Hobart, Groen, Berkel, South Bend, etc.).

Garbage in plastic bags is placed in heavy duty plastic bins and kept in a refrigerated garbage room (1.5-4.5° C), which is cleared regularly by the Institute's Janitorial Services Unit.

The dining hall serving counters are made of heavy stainless steel.

They are fixed with bains-marie, infra-red heating shelves, refrigerated cold pans, beverage dispensers, egg boilers, electric conveyor toasters, and micro-ovens. All ice cube machines and drinking water coolers are fixed with additional water filters (i.e. EC111-EC10 Everclear cold water dirt/rust filter cartridges and 9795-21 EC10 Everclear cold water dirt/rust filters).

Procurement of Raw Materials and Storage

The success of a catering establishment depends to a very great extent on its procurement. Other contributing factors are a suitable and flexible pricing structure, the standard of cooking preparation, presentation, efficient and economic staffing, and avoidance of wastage. When processing raw materials, we try to obtain the best possible value for our money.

The Assistant Manager, Food Services Unit is responsible for procuring quality supplies with the help of the Purchase and Stores Division. Although Institute has a Central Receiving Store, the Food Service Stores functions separately under the Assistant Manager. This arrangement assures that all supplies are received directly. Quality can thus be checked and the goods weighed at the point of receiving and unsatisfactory items can be returned to the supplier. Since the Center is situated about 35 km. from city, sufficient storage space for a 15-day stock of dry stores and perishables is provided. Due care is taken to store vegetables, meat, fish, eggs, and dairy products separately in individual walk-in-coolers. All vegetables are cleaned and stored in food grade polythene bags and are procured twice a week. Milk and cream are procured daily. Pasteurised milk purchased from A.P. Dairy are frozen in sachets to maintain a buffer stock. Fifteen-day stocks of meat, fileted fish, and poultry are stored in plastic bags with dates and labels (i.e. Indian, Western, Tandoori etc.), and kept separately in freezers at -12° C. Eggs are procured directly from a poultry farm thrice a week and stored in a walk-in-cooler. Efforts are made to procure meat, fish, and poultry from good suppliers with high hygienic standards. Long shelf life vegetables such as potatoes, onions, ginger and garlic are purchased once every 15 days. Cooking oils are purchased directly from manufacturers.

All foods are stored in polythene bags and crates on stainless steel racks above the floor. To use the stored food, the "first-in-first out" (FIFO) method is used. A constant watch is kept by the catering officer of the unit, who discards any deteriorated foods.

Frequent market surveys are carried out by the Assistant Manager of raw material purchases. Suppliers shops are visited to check quality and availability.

Food Preparation

While preparing the food, care is taken to avoid contamination. All vegetables and fruits are sanitised and washed/rinsed under cold water before serving. Meat, fish, and poultry are thawed separately overnight in the chef's walk-in cooler.

The next day's menu items are stored under proper cover in walk-in coolers at 1.5 to 4.5° C. Poly-top butcher's blocks on stainless steel are used for carving. The blocks are cleaned and sanitised after each use. All knives are washed immediately after use. Discarded meat membranes, internal organs, and bones are quickly transferred to garbage bins and stored in the refrigerated garbage room. All working surfaces are constantly cleaned by the cooks with washable coir pads.

Cooking

Care is taken that all raw ingredients are cooked fully at the right temperature. All ovens are thermostat-controlled to ensure correct temperature. High pressure burners giving 2,70,000 BTU/hr are used to cook large quantities of food quickly. With the help of physical plant services engineers, efficiency in running this equipment is ensured. After cooking, the hot food is transferred to bains-marie for service.

Service

Foods are prepared a half hour before serving. Cafeteria food is portioned on plates from bains-marie 15-30 minutes before actual service time. Trays are kept in heated trolleys for preplated fixed meals. For pick-and-choose self help counters with varied menu choices, main dishes are portioned in batches of 15 plates 15 minute before serving using the portion scales. Cereals, sauces, soups, etc. are kept in bains-marie at the counter for serving. Desserts, curd, salads, and cold meat are kept in refrigerated cold pans and beverages in refrigerated dispensing machines.

Another feature designed to save waiting time in the queue is the daily special menu (i.e. Chinese, western or southeast Asian food) which is served at the table within 10-15 minutes straight from the kitchen. Buffets can be set up in the Executive Dining Room with self-heated chafing dishes for groups of more than 15 persons.

In the dining halls, hot dishes are kept in thermostat controlled stainless steel hot cases and then displayed on heated stainless steel shelves for self-service. All the counters are designed with laminated wood and signs are displayed to promote healthy food practices.

Hygiene

ICRISAT's Food Services Unit is situated in ideal hygienic surroundings. We believe that continuous maintenance of the facilities and equipment and rigid compliance with the rules of personal hygiene are necessary in the preparation of safe food in any institutional catering unit.

Our food production areas are situated far from garbage, food receiving, washing-up areas, and staff restrooms. Only uniformed food services staff are permitted in the food production areas. Cleaning personnel constantly keep the floor and work surfaces clean by constantly picking up, sweeping, and mopping with disinfectants. All equipment is maintained in a clean and safe condition. Floors and work tables are cleaned with soapy water and floor-scrubbing machines daily. Apart from routine cleaning, a special cleaning schedule of a particular area is undertaken daily. The catering supervisor, the chief cook, and the senior head waiter are responsible for these daily cleaning operations.

All food handlers in constant touch with food are potential sources of food contamination. We ensure the following steps in order to maintain high standards of personal hygiene.

1. Medical certificate at the time of employment.
2. Compulsory medical check-ups every 6 months at the ICRISAT Medical Unit, including inoculation against typhoid, para-typhoid, and cholera.
3. Proper restroom and toilet hygiene.
4. Daily spot checks and adequate hygiene talks to educate food service staff and their families.
5. Medical fitness certificates for absence due to sickness exceeding 3 days.
6. Periodic medical screening of all food handlers, including stool and blood samples.

All food handlers are issued protective clothing, including caps to prevent hair falling on the food. We have a well-equipped laundry which cleans staff uniforms and linen.

Food Services staff are provided with an air-conditioned restroom with individual lockers. They are also provided with exclusive toilet facilities. The Catering Officers play a vital role in maintaining clean working areas and hygienic working habits. They ensure daily briefing of staff and carry out spot personal hygiene checks.