

Implementing of Good Manufacturing Practices Program (GMP) in Baghdad's Restaurants and Cafeterias

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Abstract: To serve sanitary and safe food meal, and to encourage restaurants and cafeterias owners to follow Good Manufacturing Practices (GMP) in their locales, this study was performed in one of Baghdad's restaurant fast food. Characterization of GMP required was described, and a check list prepared for this purpose to give evaluations (without deviations, deviations) under periodical inspection visits for four months (one visit each month). The study demonstrated deviations related to practices of: employees in food handling, buildings and production halls, equipment and utilities used in food preparation and in documentation. The study recommended giving more importance to these practices.

Keywords: Good Manufacturing Practices, Restaurants and Cafeterias, GMP.

1. INTRODUCTION

It rests to the owners of restaurants and cafeterias that serve meals in different kinds a social and moral responsibility, where they must make sure that the food meals that they prepared or processed and then served to their customers are safe and it will not cause any harm to the consumers health, so they should take several steps to make sure that meals produced are healthy and valid for human consumption. These steps lead to food quality assurance system, which includes all of Good Manufacturing Practices and Hazard Analysis Critical Control Points (1).

Good Manufacturing Practices (GMP) refers to all of directives and advice designed to clarify all aspects of the production and control that can effect of the quality and safety of the product. In the case of food and drink, GMP aims to guarantee the product to the consumer and produce it with acceptable quality for the purpose intended.

The Institute of Food Science and Technology (IFST) in United Kingdom issued in 1986 the first version of good manufacturing practices guide, and it has been recognized widely to be an indispensable reference for many of the experts and food technicians. GMP have been developed to ensure that food manufacturing processes lead to produce of standardized products in quality, defect and contamination-free, and safe as possible for human consumption, these practices has been reviewing and updating in the VI version of the mentioned institute to include the latest standards and guidelines, especially those relating to derivatives legislation of hazard analysis and critical control points ((HACCP (3).

2. THE MAIN ISSUES

The study was conducted in one of the fast food restaurants in the city of Baghdad; the study included two main issues: the first one related to the characterization of good manufacturing practices in the restaurant and the second one related of

performing an inspection visits to check these practices and giving evaluations registers in a check list prepared for this purpose.

A. Characterization of good manufacturing practices in restaurants and cafeterias:

1.1. Employees in food handling:

The human is an important element in the food manufacturing process, as the good performance of the employee entrusted with the manufacturing process, or not; reflected directly on the quality of the product; therefore one of the principles of good manufacturing practice in food is determining the minimum acceptable of employees behavior in food manufacturing, with respect of the effects of personal disposition on the quality of the product; so employees in food handling should be abide by the following:

- The staff must be qualified scientifically, or to be on a level of experience and training to qualify them to perform their assigned tasks, and to receive appropriate training in areas pertaining to food processing, including requirements for employees in food handling .
- Each person is responsible for preventing of arrival contaminants to the food product during the manufacturing process.
- Taking into account to maintain personal hygiene.
- Taking into account adherence to dress hand gloves and headdresses and what it required for preparing food.
- Stay out of places that entrance is prohibited.
- Inform his direct supervisor of any disease infected or any wound in his body maybe in contact with the product or affected on it.
- Follow all instructions related of documentation.
- Taking into account observance, concentration and attention accuracy (4).

1.2. Buildings and food preparation halls

The design of buildings and food preparation halls used for food meals in restaurants and cafeterias should be matching health design according with what it came in Iraqi Standard number 356 related to sanitary regulations in food plants. (2). It must be clean and be designed in a way to facilitate the movement of employees and materials, it should have good lighting, as well as, the spaces located outside restaurants and cafeterias should be clean and without dirt or waste in order to not to be a suitable environment for moving pests and insects inside.

Gates of entry and exit to and from restaurants and cafeterias, windows and air dischargers, water pipes and sewage must be designed in a way to prevent the entry of rodents, insects and birds. The walls of the production halls must be smooth with a scratch-resistant surface, and must avoid cavities and holes in the walls, and not to put any device on it, so as not to be a haven for insects. Floors must be from uniform material to facilitate cleaning, and crinkly little so as not to help the sliding of the employees in the case of water or fat presence, and to be slanted toward the place of discharge.

Water pipes and electrical wires should be placed around the halls of food preparation, and in the case of the need for their presence in the places of food preparation, it must be put in a safe way. Sewage pipes must have convenient fall and easy to clean, with special fat filters at the ends of the connections, for detention of fat and to prevent blockage in the sewer (5).

1.3. Equipment and utilities used in food preparation

All equipment and utilities used in the preparation of food must be easy to clean and does not allow contamination of the food product in any external contaminants, the parts that in contact with food should be made from Stainless Steel or materials that do not react with food. Heat sterilization process should be conducted by hot water or steam, where the water vapor is most effective in sterilizing equipment and utilities that contain open spaces, such as food preparation

tables, As well as, hot water functions well in sterilizing of various utilities such knives, etc and removing germs with the water flow. Chemical disinfections materials are used also for this purpose to reduce pathogenic microorganisms if it found on the roofs of utilities and equipment used in food preparation (6).

1.4. Receiving of raw materials and packing materials

The quality of raw materials used in manufacturing of food meals in restaurants and cafeterias fast food have a great importance, where it is impossible to serve food meal with acceptable quality from raw materials with poor quality, so it requires to control raw materials used in manufacturing of food meals and store it at suitable temperature until using, as well as to do daily monitoring of raw materials received to check of the suitable temperature in the cooling and freezing storage.

Usually, restaurants and cafeterias received raw materials involved in the manufacturing of food meals, either daily for vegetables, which are perishable and need cooling storage and controlling temperature until use, or at different periods for dry materials which are usually stored under normal storage conditions, and fresh meat and chicken meat which are stores in frozen storage and also need to control the temperature.

It should be consider the following when receiving raw materials from suppliers, or when buy them directly:

- Sanitation: includes (dirt, microbial contamination and the remnants of lesions), where it's known that vegetables which supplies to the restaurants and cafeterias by the suppliers, often contains dirt and dust, and sometimes be damaged due to microbial contamination or remnants of lesions, so it should be wash vegetables carefully with water before using or stores it under appropriate cooling temperature degree until using; either damaged vegetables must be refused.
- Sensorial characteristics: includes (color, taste, flavor and texture) the sensorial characteristics are also be one of the important requirements when choosing raw materials used in food meals manufactured in restaurants and cafeterias, For the vegetables, it refused if its sensorial characteristics are unacceptable in the time of receiving; either for meat beef and chicken, it should be done a sensorial evaluation; it is often giving a look with eyes to determine its validity for receiving, when it supplies by suppliers or when it bought by someone directly, then it stores when it reach the restaurant in the freezer under -18°C .

For the packing materials, it stores under proper and normal storage conditions in a suitable storage (7).

1.5. The production and the adjusting of food manufacturing process

Food manufacturing process in restaurants and cafeterias has a big impact to serve sanitary and safe food meals, satisfy consumer expectations. Among the most important risks which face the owners of restaurants to serve safe meals to their customers are the microbiological risks, where it requires controlling and reducing these risks to serve sanitary and safe food. The manufacturing of sanitary and safe food requires the following:

- Raw materials control.
- Design and food meal manufacturing control.
- Good Hygienic Practices (GHP) during the operations of storage, preparation, processing and serving.
- Procedures that prevent the occurrence of microbiological risks in food meal prepared (8).

To control of the process of manufacturing food meals in restaurants and cafeterias, it requires illustrate the stages of the manufacturing processes of the production (shawarma, for example) and determine the critical control points (CCP) on it (9), with a statement to the effect of the temperature in each stage of the manufacturing, as it mentioned in the chart (1), which shows the manufacturing steps of shawarma with identifying critical control points in it.

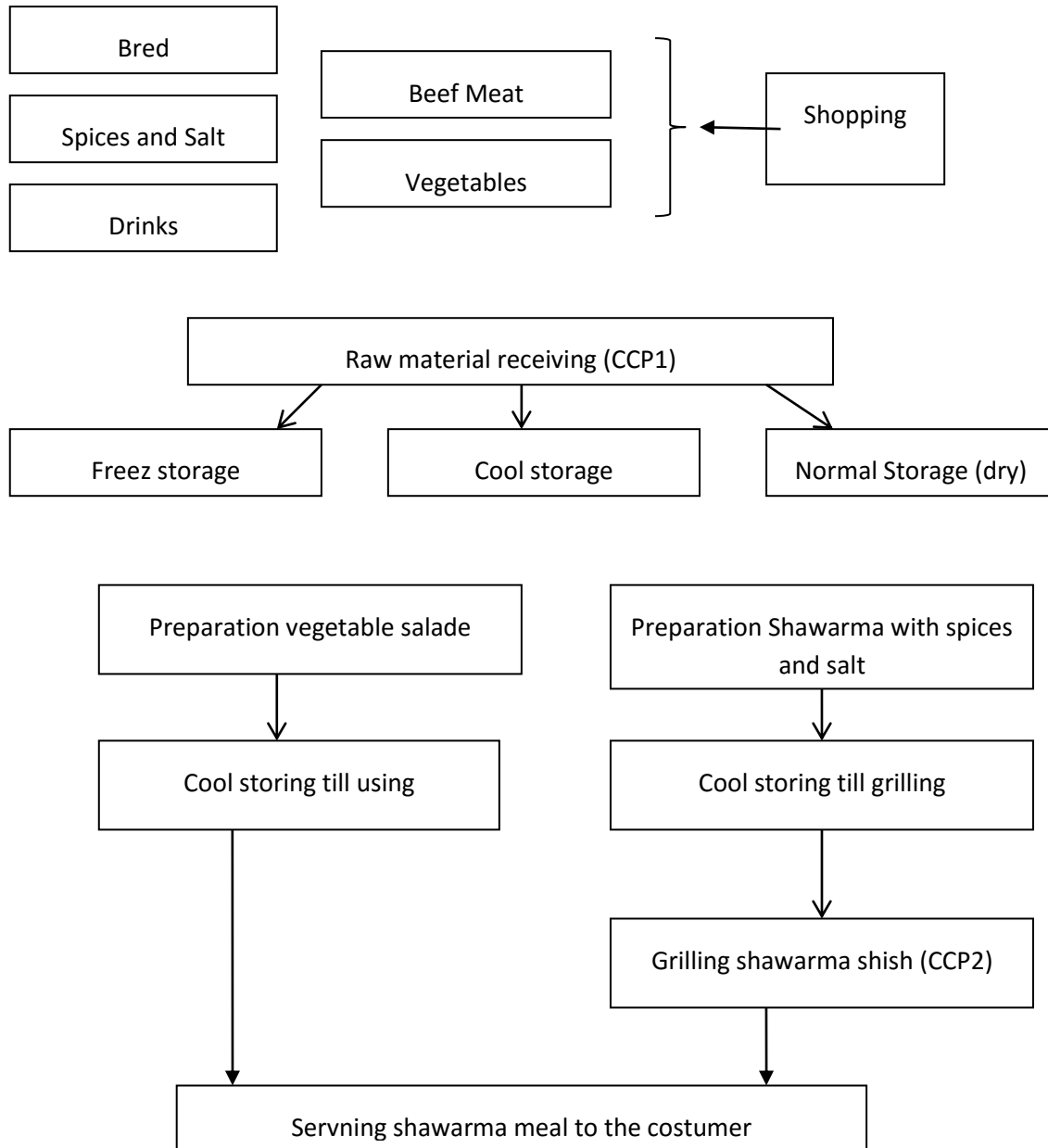


Chart 1: Manufacturing process of shawarma meal with critical control points (CCP)

1.6. Monitoring

To adjust the manufacturing process of food meals served in restaurants and cafeterias, it requires monitoring to make sure that the meal served is characterized with required quality and safety. The monitoring performed to all stages of the manufacturing operations process starting from receiving of raw materials and finishing to serving the meal to the customer. For this purpose, a check list prepares in which the responsible employee of the manufacturing process, register all of the test results required, such as measuring temperature in the measuring time; in addition to all others tests required to monitor and to adjust the manufacturing process. Also, monitoring includes sampling examination conducted by the Health Surveillance Department. The check list is based to be a reliable reference in case of occurrence any problem with the meals serve per day, or when the test samples are failed (10).

1.7. Documentation

Any quality system establishes in the food organization depends on collection of documents and the adoption of measures to control these documents for the purpose of making sure that:

- Authorized person who do the procedures of documentation; and do not occurs conflict with other documents founded in the quality system.
- When making any changes in any document; it done by the same department responsible person.
- All documents will be available in a visible location and it updates from time to time (11).

The documentation should include the following activities:

- Documents of using and cleaning equipments.
- Documents of raw materials and product components.
- Documents of packing materials.
- Documents of daily meal manufacturing.
- Documents of hygiene, storage and maintenance.
- Documents of monitoring or quality control.
- Documents of rejected materials and deposal methods.
- All documents keeps in the records for a certain period.

B. Performing an inspection visits:

A check list has prepared according to what it came in (9) contains good manufacturing practices which should be evaluated in restaurants and cafeterias of fast food (table 1), and these practices has given evaluations (without deviations, deviations) to refer of implementing or not implementing of a certain practice, this performed during four months (one visit each month), the results registered as indicated in table 1.

Table 1: Check list of Good Manufacturing Practices

Good Manufacturing Practices related of food preparation	without deviations				Deviations			
	1	2	3	4	1	2	3	4
1. Employees in Food handling								
1.1 Personal Hygiene								
1.2 Employees Health					X			
1.3 Training								
1.4 Washing facilities in food preparation hall								
1.5 Personal Hygiene (other)					X	X		
2. Buildings and production halls								
2.1 Cleaning and disinfection of surfaces in contact with food								
2.2 Cleaning and disinfection (other)					X			
2.3 Waste handling								
2.4 Pest and insects handling								
3. Equipments and utilities used in food preparation								
4. Adjusting of raw material and packing material					X	X		
5. Production and adjusting of manufacturing process								
5.1 Temperature: Active procedures to keep the food hot								
5.2 Temperature: Active procedures to keep cool storing								
6. Monitoring								
7. Documentation					X	X	X	X

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3. RESULTS AND DISCUSSIONS

The evaluations of inspection visits during four months demonstrated deviations in first month in the practices of: Employees in food handling, Buildings and production halls, Adjusting of raw material and packing material and in Documentation.

En the second month, there were deviations in the practices of: Employees in food handling, Adjusting of raw material and packaging material and in Documentation.

En the third and fourth month, there were only deviation in the practice of Documentation.

This study recommended giving more attention to the following:

- Practice of (employees in food handling), specially what it related to (point 1.2: health of employees), as observed during the inspection visit in the first month, and (point 1.5: personal hygiene (others)) as observed during the inspection visit in the first and second month. During these inspection visits, there were non-compliance from some employees to wear hand gloves and headdresses, threatening to potential microbial risk.
- Practice of (buildings and production halls), specifically (point 2.2: cleaning and disinfection (other)) as observed during the inspection visit in the first month, where it noted careless in the cleaning in packing materials storage, allowing to possible microbial and physical contamination.
- Practice related to documentation, where it noted not to conduct any documentation in detail along of visits inspection during four months, especially those relating to the measurement of the temperature of cooling and freezing stores, as well as other documentation procedures reported in this study.

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