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Editorial

GMP/HACCP: A Tool for Every Food Handler for Food Hazard Prevention

MU Ukwuru*

Department of Food Science and Technology, The Federal Polytechnic, Idah, Kogi State, Nigeria

***Corresponding Author:** MU Ukwuru, Department of Food Science and Technology, The Federal Polytechnic Idah, Kogi State, Nigeria.

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Good Manufacturing Practice (GMP)/Hazard Analysis Critical Control Point (HACCP) are systems which identify specific hazards and predicative measurers for their control. It is very core to management of food safety programs and it is internationally recognized (CODEX). Under this situation, a program is designed to be specific to a food facility and requires corporate commitment and the commitment of employees.

From the foregoing, GMP/HACCP concept is a concern for everyone. Unfortunately, most people see the system as only for corporate organizations like food industries, hotels and restaurants, catering operations in flights and cruise ships. Most homes do not pay attention to the GMP/HACCP programs and it will not be an understatement to say that many homes are not aware of the system. The absence or lack of awareness of this program in homes has resulted in continuous consumption of contaminated foods with its attendant consequences without any epidemiological records; hence such cases may never be traceable. The number of homes and individuals who fall into this group along the food chain is so large and cannot be ignored. Unfortunately, regulatory institutions can set the standard but cannot enforce compliance in all of the chain. It is therefore imperative, at this time, to let every home and everyone know about GMP/HACCP as it relates to the control of food hazards.

The HACCP involves the GMP, HACCP plan and the verification that the two are working. GMP as a prerequisite program is concerned with control of food environment and food handlers while the critical control point (CCP) is designed to control a specific hazard. This is very beneficial because it is a scientific way for safety management system which enables the participation of all food handlers. In this system, there is due diligence and clear responsibilities of those involved. Ultimately, it builds confidence between food handlers and consumers. Consumer confidence is high where consistent product quality exists. This brings about continuous consumer patronage which leads to growth in business and assures job security.

GMP/HACCP at home or in the industry will provide an auditable system for food safety if a plan on how food safety issues are to be handled is in place. Against this background, it is necessary to develop prerequisite GMP programs with details of how hazards will be controlled in food industries and homes. Where a prerequisite program does not cover a particular hazard, then a CCP should be established.

It is pertinent that those who handle foods at all levels know the aspects of food safety in relation to the duties they undertake since they must be responsible for controlling food hazards. This means that food handlers must promptly take corrective actions at any critical points of food operations before it becomes a problem.

Training and retraining of food handlers is important for their commitment to duty. The job of consuming safe and wholesome food is the responsibility of all who handle foods at every point in the food chain, from farm to the table.

Good control is very important to prevent food contamination that may be a public health hazard. Controlling critical points in the food chain is the duty of everyone who has something to do with the food hence success can be achieved through corporate commitment, effective planning and proper implementation of the GMP/HACCP program.

For the above to be effective, it is important to understand the characteristics of food. The internal characteristics of foods deals with the kind of nutrients, moisture content, pH and its physical structure. Externally, foods respond to temperature, presence or absence of oxygen and the type of packaging.

Temperature and time are key factors that are directly related with food spoilage and pathogenic microorganisms that grow on food have their temperature optima and time required for their growth.

However, food handlers have the ability to control temperature. Therefore, it is imperative to check all food ingredients, the food itself and processes for biological, chemical and physical hazards. Sources of hazards may come from food handlers, ingredients, materials, equipment, processes and buildings.

Food handlers may harbour food spoilage and pathogenic microorganisms on their skin, hair, nails, sores, colds or clothing. These biological agents are transmitted into foods during contact with food, sneezing etc. Chemical agents like soaps and grease used by food handlers may be transmitted into food. Physically, jewelries, clothing and pens, if handled carelessly could form sources of contamination. The sources of hazards may also come from ingredients and materials whereby microorganisms associated with them may constitute contamination of foods. Some ingredients and materials may contain allergens and residual chemical compounds. Foreign materials may also be physically present. Under a system where poor sanitation occurs, it may lead to biological contamination of equipment. Airflow may also carry along microorganisms. Lubricants and cleaning chemicals can form part of the food contaminants. During the process of food handling, cross contamination of microorganisms from person to person and from person to food may occur. Microorganisms which receive inadequate heat treatment and inadequate storage temperature in the foods may later grow to spoil the food or they may be pathogens. Chemical residues and boiler chemicals in steam are sources of chemical contaminants. The nature of building may form sources of contamination. Microorganisms could be attached to walls, floors, openings or cracks on bench surfaces where they form films and some may sporulate and the spores carried by air currents into the foods. Condensates take place on surfaces that favour the growth of microorganisms. Presence of pests could spread microorganisms as well as the movement of human personnel within the food environment. Other sources may be chemicals that are stored which are reacting, the nature of ventilation and physical materials such as glass, wood, metals which all habour microorganisms. To establish critical control points in our food, we have to determine steps at which to apply control to prevent food safety hazards, hence creating critical limits to separate acceptability from unacceptability. Biological hazards occur due to contamination from people, equipment, utensil, pest, uncontrolled conditions such as inadequate cleaning, uncontrolled temperature and exposure to moisture. Inadequate destruction of microorganisms could occur due to ineffective sanitation and inadequate heat treatment. To control biological hazards, appropriate temperature control such as keeping frozen food below – 18^0C should be employed. It is also important to maintain control on moisture, nutrient and atmosphere. Determine the sources of microorganisms and their growth requirements to create adverse conditions which will prevent their growth. Time is of essence here bearing in mind how rapid microbial cells can multiply within a short time. Prevent sources of contaminations from people, animals, insects, packaging, soil, water, air etc.

Chemical hazards, for instance, from cleaning agents sanitizer residue, lubricants, natural toxins (e.g aflatoxin) and allergens, can contaminate food through other foods, residues, equipment and utensils. This condition prevails due to uncontrolled conditions like inappropriate applications of standard operating procedures (SOP) or the lack of it, use of inappropriate storage facilities; lack of quality control system or its abuse and overcrowding of storage. This can be avoided by the development of correct SOP and prerequisite programs and following the procedure rigidly.

Physical hazards are created in food systems when there are particulate matters in foods such as broken glass, wrong use of packaging, food ingredients, online breakdown during processing and physical damage to product. Inappropriate use of SOP and quality control can result in uncontrolled conditions in food contamination. The use of metal detectors, magnets and x-rays coupled with appropriate prerequisite programs and SOP can mitigate and prevent food safety hazards.

Perquisite programs should consider the premises housing the food. The building, both outside and inside, must be kept under good sanitary condition. Surfaces should have adequate cleaning. Roadways and drainages should be demarcated properly. The building should not habour pest. Construction materials should lend themselves to easy cleaning and damaged postions should be repaired. The building should not permit the entrance of environmental contaminants. The use of systems that create negative air pressure is encouraged to prevent contaminating air flow into the building. Effective sanitation of the premises, proper hand washing and equipment cleaning should be carried out. Consideration should be given to water quality and supply program, storage of things like ingredients, finished products, packaging, damaged materials and chemicals.

Programs developed should consider how food and packaging should be received and inspected as they come and conditions for rejection of product should be specified. Food must be stored to avoid cross contamination, while perishable foods should be stored

below 40^0C. Adherence to product storage instruction is necessary.

Stored items should be coded for easy identification. Personnel training on hygiene practices as a preventive measure for food safety hazards must be properly documented and practiced.

There is already a shift from GMP to CGMP (Current Good Manufacturing Practice). The aim is to ensure the consumption of absolutely wholesome food and avoid food safety hazards. Food safety is for everyone who is involved in handling food along the food chain. Hence, everyone is encouraged to be conscious of GMP/HACCP principles the next time you find yourself handling food at any level of the food chain.

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