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QUESTION

1. Explain food and studies as a subject of study and outline the relevance of food and catering studies to events management professional.
2. Discuss various heating techniques used in a food processing plant with appropriate examples.
3. Discuss in details the major types of food preservation techniques commonly employed by the food processing companies

ANSWERS

1. Food studies is the critical examination of food and its contexts within science, art, history, society, and other fields. It is distinctive from other food-related areas of study such as nutrition, agriculture, gastronomy, and culinary arts in that it tends to look beyond the mere consumption, production, and aesthetic appreciation of food and tries to illuminate food as it relates to a vast number of academic fields. It is thus a field that involves and attracts philosophers, historians, scientists, scholars, sociologists, art, historians, anthropologists, and others.

RELEVANCE OF FOOD AND CATERING STUDIES TO EVENTS MANGEMENT PROFESSIONALS

If you're hosting an event, whether for just a chosen group of people, or for a large number of them, you know that the planning can be exhausting and overwhelming. There are so many things to take into consideration and so many angles to cover. One of the most important part of any event is the food.

Nowadays most people opt for hiring professionals for this job, and for many good reasons. Although some may think that they can do it on their own, in the end they realize the whole organization process is much harder than they initially thought. So, here are some of the reasons catering is the best way to go for any type of event.

- **IT SAVES YOUR TIME AND MONEY**

This is a common misconception based on the fact that, when you hire caterers, you aren't aware of how much they actually do. It's not just about providing the food for your event. Imagine you had to place every table and chair in the venue and then think about how to

decorate them best. Who would wait on your guests? And if you chose to make the food yourself, where would you buy the highest quality ingredients for the best price?

Caterers are familiar with the optimal alternatives when it comes to the quality to price ratio, while you would probably end up spending too much money on food you aren't even sure is good enough for your guests. Plus, they will take hours off your schedule by doing a massive amount of work for you, work which would very likely leave you tired and stressed. Therefore, leaving the matters of food, venue decoration and various other services to catering professionals will relieve you of stress and give you enough time to deal with your own responsibilities.

- **THEY CAN MANAGE BIGGER EVENTS**

Even if you were able to make food for an event of a dozen or so people, what happens when your event is bigger and you invite 50 guests? Or 300 guests? Those kinds of events would certainly be too much for you to handle and would probably get out of hand very quickly. However, if you get a catering service for the event, they will be more than capable of providing for as many guests as you invite. Most of these companies employ several experienced chefs and other staff, who will all work full hours at the same time if that's what it takes to prepare the food for your guests. All you have to do is choose whether you want a buffet, a barbecue, sit-down feast or anything else.

A quality catering company have their own qualified waiters, which is also important when you have a large guest count, since you can't hire just anybody and you can't have five waiters serving hundreds of people. By putting your trust in a respectable catering service, you'll be able to relax, since they'll know exactly how many waiters will be required to cover all the tables and all the guests at your event.

- **THEY WILL HAVE THE BEST IDEA FOR EVERY OCCASSION**

There are many types of events you can host. It could be a wedding or an engagement party, a birthday party for your child, or a corporate event. The fact is, you can't serve the same types of food at each of these events. While three-year-old kids will be more than happy with pizza, chips and popsicles, this isn't something you can serve if it's your child's eighteenth birthday, let alone if it's their engagement party. This is where catering companies come in. They have

a whole assortment of meals for any occasion and will be able to recommend just the right combinations for the event you're hosting. Furthermore, not only will they make sure that the food tastes incredibly good, but they'll invest some time, patience and effort into presenting it to your guests.

All those Instagram-worthy canapes and bites, food stations and mouth-watering drinks will leave you very happy with hiring professionals. And let's not forget the venue and how it's decorated. When you give the job to the right people, they'll know exactly which colors to pair, where to place the buffet, and which flowers to choose for the table décor. They'll also know how big the flower arrangements should be to make the tables look lovely, but not to take too much space, so that there's plenty of room for your guests to put down their plates and champagne glasses as well.

2. HEATING TECHNIQUES USED IN A FOOD PROCESSING PLANT

• BLANCHING

The primary purpose of blanching is to destroy enzyme activity in fruit and vegetables. It is not intended as a sole method of preservation, but as a pre-treatment prior to freezing, drying and canning. Other functions of blanching include:

- a) Reducing surface microbial contamination
- b) Softening vegetable tissues to facilitate filling into containers
- c) Removing air from intercellular spaces prior to canning

EXAMPLES OF BLANCHING

• Steam blanchers

This is the preferred method for foods with large cut surface areas as lower leaching losses. Normally food material carried on a mesh belt or rotatory cylinder through a steam atmosphere, residence time controlled by speed of the conveyor or rotation. Often poor uniformity of heating in the multiple layers of food, so attaining the required time-temperature at the center results in overheating of outside layers.

- **Hot water blanchers**

Includes various designs which hold the food in hot water (70 to 100°C) for a specified time, then moves it to a dewatering/cooling section. In blanchers of this type the food enters a slowly rotating drum, partially submerged in the hot water. It is carried along by internal flights, residence time being controlled by the speed of rotation.

- **PASTEURIZATION**

Pasteurization is a relatively mild heat treatment in which food is heated to <100°C. It is widely used throughout the food industry and is frequently employed as a CCP in various HACCP plans. As a unit operation in food processing it can be used to destroy enzymes and relatively heat sensitive micro-organisms (e.g. non spore forming bacteria, yeast and moulds). In this regard it is used to extend shelf life by several days e.g. milk or months e.g. bottled fruit. The severity of treatment and resulting extension of shelf life is determined mostly by pH of the food. In low acid foods (pH<4.5), the main purpose is destruction of pathogenic bacteria, while below pH 4.5 the destruction of spoilage microorganisms or enzyme deactivation is usually more important. The extent of heat treatment required is determined by the D value (Decimal reduction time or time to reduce numbers by a factor of 10 or 90% of the initial load) of most heat resistant enzyme or micro-organism which may be present. In terms of checking the effectiveness of the process, alkaline phosphatase is a naturally occurring enzyme in raw milk with a similar D value to heat-resistant pathogens and so is routinely used as an indicator of adequate pasteurization. If phosphatase activity is found, it is assumed that pasteurization is inadequate. Pasteurization is normally used for the destruction of all disease causing organisms (e.g. pasteurization of milk) or the destruction or reduction in the number of spoilage organisms in certain foods e.g. vinegar.

- **STERILIZATION**

Unlike pasteurized products where the survival of heat resistant microorganisms is accepted, the aim of sterilization is the destruction of all bacteria including their spores. Heat treatment of such products must be severe enough to inactivate/kill the most heat resistant bacterial microorganisms, which are the

spores of Bacillus and Clostridium. Food products filled in sealed containers are exposed to temperatures above 100°C in pressure cookers. Temperatures above 100°C, usually ranging from 110-121°C depending on the type of product, must be reached inside the product. Products are kept for a defined period of time at temperature levels required for the sterilization depending on type of product and size of container.

If spores are not completely inactivated, vegetative microorganisms will grow from the spores as soon as conditions are favorable again. Favorable conditions will exist when the heat treatment is completed and the products are stored under ambient temperatures. The surviving microorganisms can either spoil preserved food or produce toxins which cause food poisoning. Amongst the two groups of spore producing microorganisms Clostridium is more heat resistant than Bacillus. Temperatures of 110°C will kill most Bacillus spores within a short time. In the case of Clostridium temperatures of up to 121°C are needed to kill the spores within a relatively short time. These sterilization temperatures are needed for short-term inactivation (within a few seconds) of spores of Bacillus or Clostridium. These spores can also be killed at slightly lower temperatures, but longer heat treatment periods must be applied.

3. TYPES OF FOOD PREPARATION TECHNIQUES EMPLOYED BY THE FOOD PROCESSING COMPANIES

a) Filtration:

Microorganisms can be removed from the water, wine, beer, juices, soft drinks and other liquids by filtration. Several major brands of beers are filtered rather than pasteurized to preserve the flavor and aroma of the original product.

b) Dehydration and freeze-drying:

Dehydration, such as Lyophilization to produce freezing dried foods, is a common method of eliminating microbial growth. It is especially effective for vegetables and pasta.

c) Refrigeration:

Refrigeration temperatures (typically -2°C to 16°C) slows microbial growth but can't eliminate microbes completely. Thus, it is only used to preserve food for shorter periods and generally used for household purposes.

d) Vacuum Packing:

Food can be packed under vacuum or under atmosphere with decreased oxygen or increased carbon dioxide level. For example, carbon dioxide storage is particularly effective for extending the shelf life of Apples.

e) Pasteurization:

Pasteurization involves heating food to a temperature that kills disease-causing microorganisms and substantially reduces the levels of spoilage organisms with minimal effect on food value and texture. For example, milk is commonly pasteurized at 63°C for 30 minutes followed by quick cooling to 4°C .

f) Canning:

Canning is most widespread and effective means of long-term food storage. In canning, food is cooked under pressure to attain a temperature high enough to destroy endospores (around 121°C). After heat treatment, the cans are cooled as rapidly as possible, usually with cold water. The main drawback of canning is that the quality of food is sometimes compromised, particularly that of liable biochemicals such as vitamins.

g) Microbial Product–Based Inhibition:

Bacteriocins are bactericidal proteins active against closely related bacteria, which bind to specific sites on the cell, and affect cell membrane integrity and function. The only currently

approved product is Nisin. It is nontoxic to humans and affects mainly gram-positive bacteria, especially *Enterococcus faecalis*. Nisin can be used particularly in low-acid foods to improve inactivation of *Clostridium botulinum* during the canning process or to inhibit germination of any surviving spores.

h) Irradiation:

Exposure to ionising radiation, known as food irradiation, effectively sterilizes many kinds of food for long-term storage. The main concerns about food irradiation are its potential for unknown effects on food chemistry and the hazards of irradiation during human involvement in the process.