

Question no: 01

A - Differentiate between food adulteration and food contamination. Give controlling measures of food adulteration.

<u>Adulteration</u>	<u>Contamination</u>
<u>Definition</u>	
<p>Food adulteration is a process in which hygienic material is reduced intentionally in the food and some unhygienic items are placed that is illegal and unethical.</p>	<p>Food contamination occurs when harmful substances are added in the food, although unintentionally.</p>
<u>Example</u>	
<p><u>Milk</u>: Starch or whitener is added in milk to maximize the quantity.</p>	<p><u>Oil</u>: Oil or ghee that is produced at dirty place. e.g. where flies and insects present; minimize the quality. (Doh)</p>

Money: Instead of pure honey, ~~sugar is~~ added in it to deceive the people.

Juice: In the polluted areas, the flies or insects add in this product that makes it unhygienic.

Side effects

It affects the health of the people. For instance, sugar, cancer, hepatitis etc.

Due to unhygienic food, it affects the stomach and intestines and even leads towards Typhoid.

Sources

Tea, Honey, milk, Lantils etc.

Juices, water, oil, packed goods.

Controlling measures

- To give awareness to the factories, that how they are playing with the lives of people.
- Strict action from government.
- Public awareness.

- Strict policies regarding cleanliness.
- Public awareness.
- Factories should be get registered.

Controlling measures of food adulteration

Strict actions from government

The government should rade the areas where food is processed. The checkers should check the quality of food. If there is something fishy, she should take strict actions.

Punishments

Punishments should be enaugrated for these causes. So that they could think before doing these deeds.

Example from India: India has strict policies regarding these matters. For instance: To take 10,000 Rs in case if government will know for this unethical work. If the person is died due to eating their food. The owner of the factory will be punished (of) life time imprisonment.

Public awareness

The public should get awareness about the quality of food.

Factories registration

All factories should be registered by government. So that the employees would check them all the time, whether they are doing unethical deeds or not!

B- Describe food preservation methods with examples.

Food Preservation methods

Food preservation methods are defined as, the methods from which the food is prevented from spoilage. There are a lot of methods. For instance, heating, cooling, salting, smoking, and drying.

Methods

1- Heating

The product is given heat up to 100°C because some bacteria are still remained after boiling at 100°C .

That's why the temperature is extended to 125°C so that all bacteria could be die.

For instance: The water that is provided in cans in markets, is usually boiled and preserved through this process.

2. Colding

Bacteria grows usually at $(19-36^{\circ}\text{C})$. The more product is cold, more it is bacterial free. Usually (-10°C) temperature is given.

Example: Freezing the products like meat or vegetables.

3. Smoking

It is one of the conventional ways of preservation. The people used to give smoke to their products so that they could remain for long time.

According to the scientific research, bacteria die due to giving smoke to the product.

For example:

Meat, fruits etc.

4- Drying

It is also one of the conventional methods of preserving food.

Through drying under the sunlight, food is preserved for a long time. This method is still useful in the Northern areas of Pakistan and other countries.

For instance:

Fruits, meat etc.

5- Salting

This method is used especially in South Asia. (and) e.g. India and in Pakistan-Bangladesh in the form of pickle.

And food is preserved for a long time.

In Northern areas, they salt even meat for preservation.

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C-Define:

Temperature

Temperature is a physical quantity, that expresses quantitatively hotness or coldness of the area.

It is measured by thermometer.

Unit: Celcius, Fahrenheit

(Its unit is ^{*}Pascal. That can also be represented by (Pa))

Formula:

$$C = \frac{5}{9} \times (F - 32) \quad \text{OR}$$

$$F = \frac{9}{5} (C) + 32$$

$P = \frac{F}{A}$

(The formula indicates that it is also a force per area.)

Pressure

Pressure is basically an atmospheric pressure which indicates a force per unit area.

Unit:

Its unit is Pascal. That can also be represented by the symbol (Pa).

Formula:

$$P = F/A$$

P = Pressure

F = Force

A = Area

Humidity

Humidity is the (meas) indication of volume of air and water vapour in the atmosphere.

The more air and water vapours, the more humidity there will be. Hence, they are directly proportional to each other.

Unit:

$$\text{Humidity} = \text{g/kg}$$

Formula:

$$AH = \frac{m_{H_2O}}{V_{net}}$$

AH indicates humidity

m_{H_2O} = Mass of water vapour

V_{net} = Volume of air and water vapour mixture.

Formula:

$$P = F/A$$

P = Pressure

F = Force

A = Area

Humidity

Humidity is the (mean) indication of volume of air and water vapour in the atmosphere.

The more air and water vapours, the more humidity there will be. Hence, they are directly proportional to each other.

Unit:

$$\text{Humidity} = \text{g/kg}$$

Formula:

$$AH = \frac{m_{H_2O}}{V_{net}}$$

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m_{H_2O} = Mass of water vapour

V_{net} = Volume of air and water vapour mixture.

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D. Phenomenon of Earthquake

Introduction

Earth has a lot of plates in it that are slowly moving. Somehow they are exerted on each other and apply a force to change their place. And sometimes, they change their place only. Through this phenomenon, we feel a movement on our earth. That phenomenon is called earthquake.

Reason:

It can be happen through volcanic eruptions.

Movement of plates inside the earth.

Types:

Normal : Intensity till 100

Medium : Intensity less than 300

High : Intensity larger than 300.