

agMOOCs

Food sanitation & hygiene

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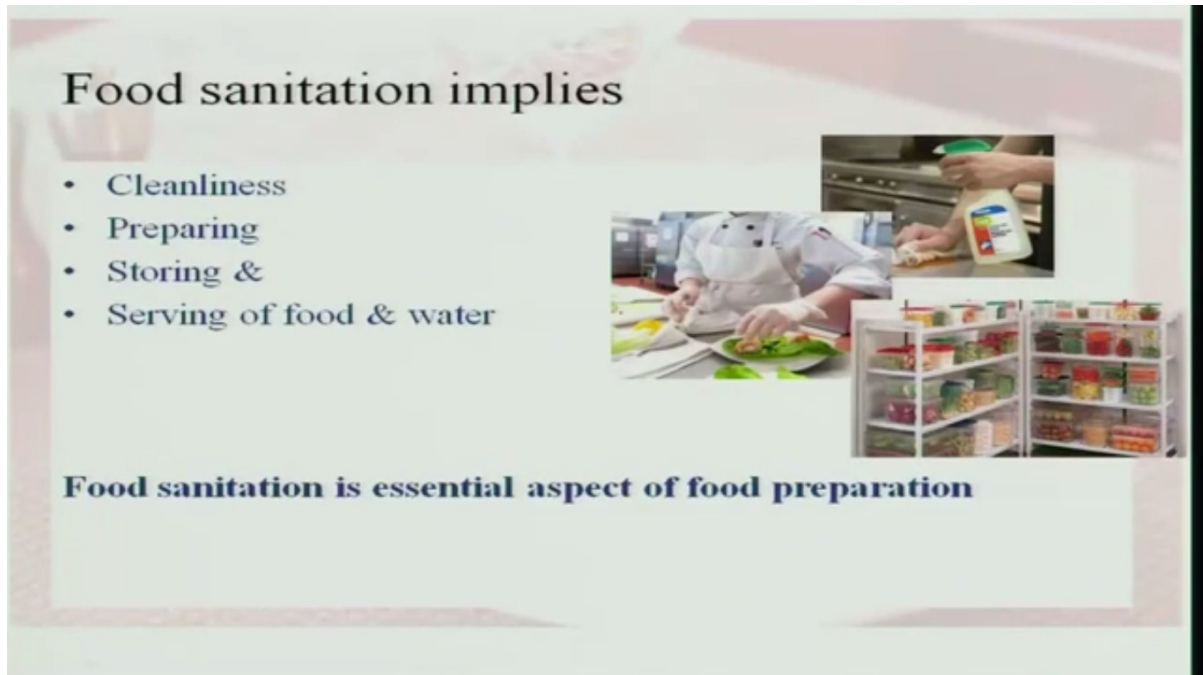
Welcome back, and we have been studying how we have to learn about the balanced diet, and how we have to plan a meal taking into consideration, so many factors, and how we feed our family and the people in a very good manner so that they keep healthy and fit.

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After knowing all these, we should also know what is the food sanitation and hygiene, how you prepare the food in a manner which it is hygienically prepared?

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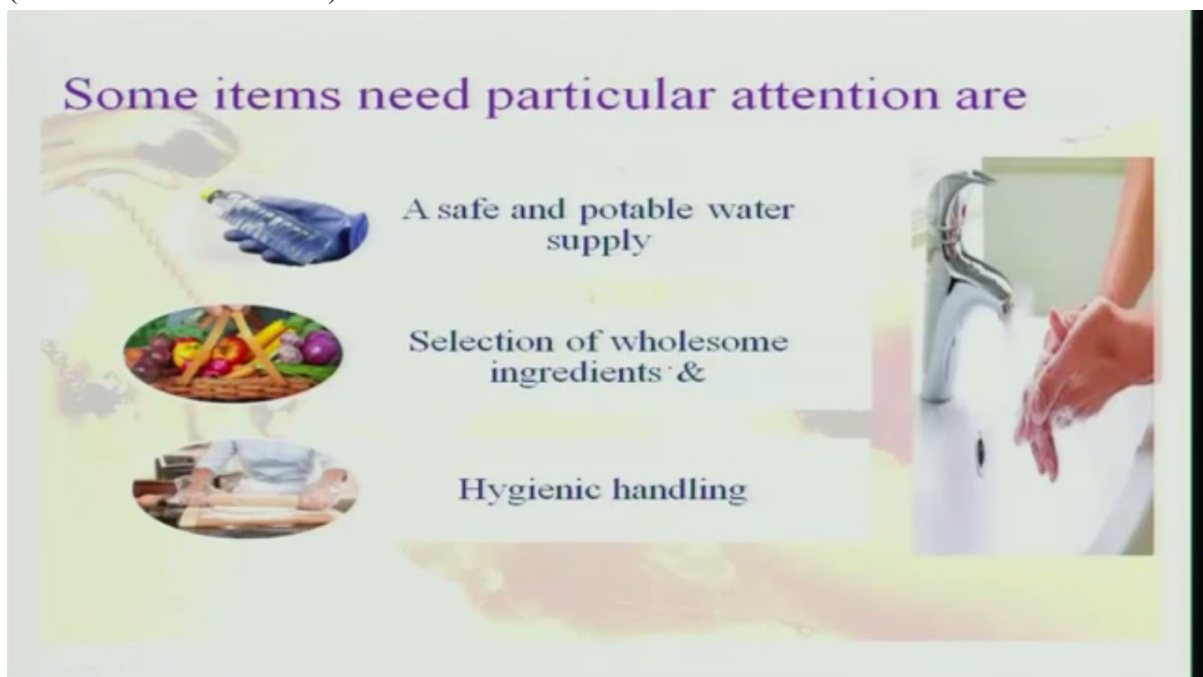
Food sanitation implies

- Cleanliness
- Preparing
- Storing &
- Serving of food & water

Food sanitation is essential aspect of food preparation

So food sanitation means it implies cleanliness, preparing, storing, and serving of food and water. So this is the most essential part of the food preparation. You see how neatly they are stacked, and he is cleaning every place after preparation, and the vegetables also are very nicely prepared using gloves and apron etc.

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Some items need particular attention are

- A safe and potable water supply
- Selection of wholesome ingredients &
- Hygienic handling

Some items need particular attention, and we should have a safe and portable water supply so that because the water is the best carrier of the microorganisms, which make you ill health. Then selection of wholesome ingredients. When you select vegetables, and grains and all, you select the best material so that it stays for a little longer time before you cook, and there is no infestation or infection in the foods that you consume. Then after you get a good water, and good vegetables and grains, it is not enough that you purchase very good items without handling them properly. So hygienic handling also is very important.

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Water

- Is essential in food preparation

Water is used to

Wash food before cooking
Clean the containers
Make beverage

It should be free from pathogenic bacteria

Now water is the one ingredient which is essential for any preparation. So it is an essential part in the food preparation, and we use water to wash our hands, and wash the vegetables and the grains before cooking. So for that before cooking, you have to clean the containers and for that also water is used. Then to make the beverages, water is used and it should therefore water we select should be free from pathogenic bacteria. That means it should be a pure water and that is called a portable water.

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Potable water

- Water which is free from pathogenic bacteria
- Water should be free from harmful bacteria
- Water may contain dissolved salts or minerals
- Special treatment should be given to remove these impurities & make it safe for potable purposes

Now potable water, which is free from pathogenic organisms, it should not have any harmful bacteria. Because water is carrier for so many waterborne infections, so it should be free from bacteria, and it should not contain much of dissolved salts and minerals. The water definitely contains some salts and minerals, but the quantity should not be too much high, and special treatment should be given to remove the impurities so that it is safe for portable purposes. Portable purposes is for drinking and cooking.

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Sources of contamination of water

- Through the seepage of sewage
- Sewage can be carrier of many pathogenic bacteria
- Many healthy persons may be carriers
- Human excreta is deposited near shallow wells, ponds or even rivers especially in rural areas

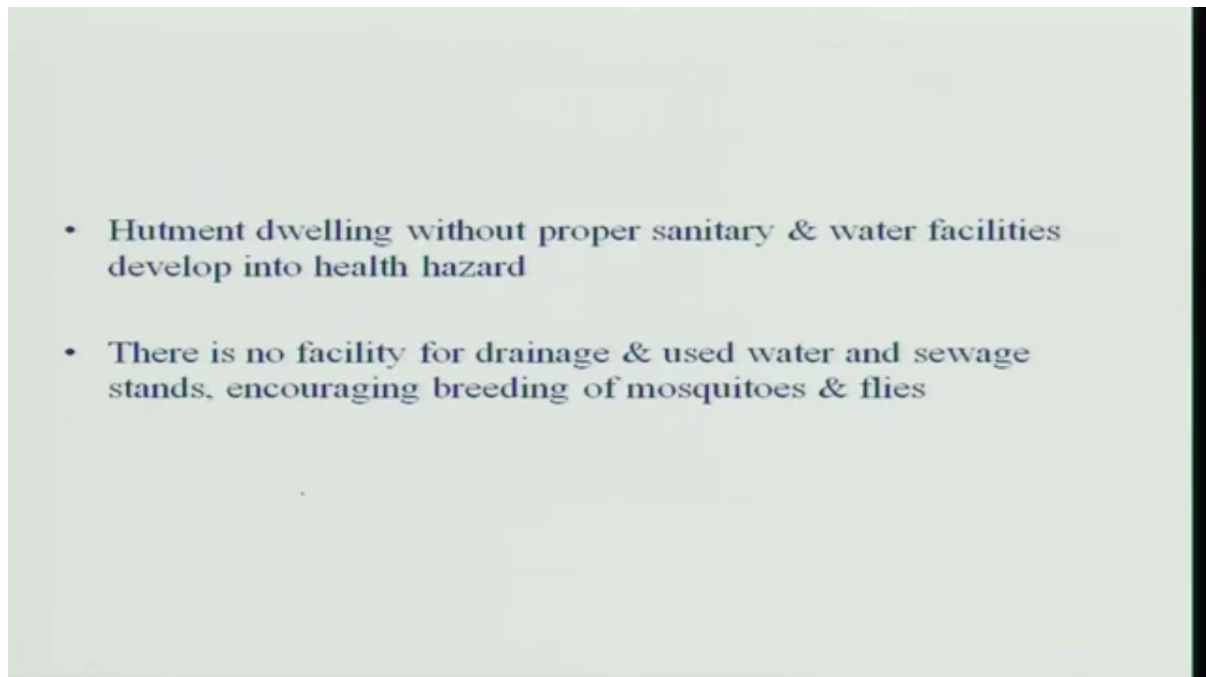


Then sources of contamination of water, you have through seepage of sewage. When the water pipeline and the sewage pipeline go together, there is a chance of sewage seepage into the water. Then sewage, as we know, it is a great carrier of the pathogenic bacteria, because it

comes through so many ways like the -- it comes through the waste of -- waste, wastage that is released from the human beings, from the animals, and from the washing of various things like starting from clothes to animals to human beings.

So many healthy persons may be the carriers. You will not know who is a carrier of disease, and when they go and take bath in the water and excrete in the water, these organisms may be entering into the water. Then when you see near the shallow wells and ponds, many people do their excretion. So this excretion, when the human excreta is deposited near the ponds and the wells, this slowly this gets seeped into the rivers or ponds and gets contaminated.

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Then hutment dwelling is another area where there is lot of contamination of water because of improper sanitary measures they follow and very low water facilities. They do not have water facilities, so they get water from somewhere and use the water outside their homes which causes a lot of health hazard.

Then there is no facility for drainage and used water. Then there is the sewage stands around the houses, and this encourages the breeding of mosquitoes and flies. And the flies, they move from one place to the other, and they may move from the excreta to the water or on the food and they get contaminated very easily.

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What you can do about pesticide residue

- It can cause a serious problem in the diet

Precautions

Thoroughly rinse & scrub fruits & vegetables



Remove outer leaves of leafy vegetables



Trim fat from meat, poultry & fish



Throw back the big fish



So what you can do about the pesticide residue? Now today what the vegetables that are grown are highly containing the pesticides. So after giving the pesticide, they have to keep it for a period of time so that the pesticide residue does not remain in the vegetable. But the farmers harvest is so fast that the residue remains on the vegetables. So this can cause a very serious problem in the diet. So you have to take precautions to remove the pesticides.

So thoroughly rinse and scrub fruits and vegetables so that whatever the dust that is remaining on the fruits and vegetables is removed. Then remove outer leaves of leafy vegetables like cabbage or you peel the vegetables and trim the fat from meat, poultry and throw back the big fish, because when these fish are given so many of the insecticides and all the things that remove the harmful things from the fish, they grow very big. So throw back the big fish.

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Food

- Wash the vegetables & fruits before using
- All exposed foods must be washed with clean water
- Outer layers, skin of plant material contain thousands of microorganisms & must be washed before use
- The skin, hair, feathers, intestines of animals contain a number of microorganisms should be removed before preparation

Then with regard to food, you have to wash the vegetables and fruits thoroughly before using, and all the exposed foods must be washed with clean water. When you go to the market, you see the food, entire fruits and vegetables are exposed, and there is lot of dust and pollution around it. So before cooking, the food should be washed and clean, and very good water should be used for washing. For example, if you see fruits like Guava, they are sold on the carts, and it is open, and we cannot purchase and eat it immediately. So before eating, they should be washed thoroughly.

Then outer skin of plant material, they contain lots of microorganisms. So, again, washing is very important to remove these microorganisms. Then when it is with the animal foods, the skin, hair, feathers, and intestines of the animals, again these contain a lot of microorganisms. So you remove the hair, whatever the skin is there, the intestinal part, everything is removed, and only the muscle part and bone part is used for preparation.

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Food handling

- Food comes into contact with human hands during harvesting, storage, preparation and serving
- Food handlers should be free from any communicable diseases
- Human hair, nasal discharge, skin can also be source of microorganism



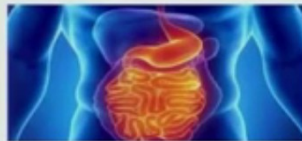
Now after taking so much of care for cleaning the food and vegetables, the food handling is another important aspect of hygiene and sanitation. So food comes into contact with human hands during harvesting, storage, preparation and serving. All these parts are sometimes serving also is done with hand. So food handlers should be very much free from communicable disease.

What is a communicable disease? A disease which spreads from one individual to another individual very easily, either by contact or through inhaling the air is called a communicable disease. So they should be free from the communicable disease. Then human hair, nasal drainage, and skin also can be a source of microorganism. That is why they should have a head cap. Then they should have gloves and a mouth mask so that all these three are prevented from, I mean, the spoiling the food or contaminating the food with infectious organisms.

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Persons handling food must

- Wash hands with soap
- Refrain from touching hair or wiping nose
- Food sanitation is a way of life
- A number of gastrointestinal disorders are communicated by use of contaminated water or food

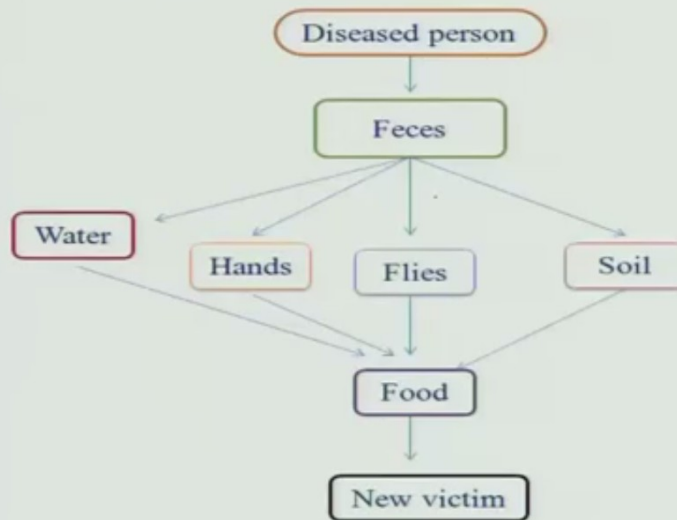


Then persons who are handling the food must before serving the food or handling the food, they must thoroughly wash the hand with soap. It is not only with water, but along with soap they should wash very nicely, and refrain from touching the hair or wiping nose when the preparation is going on so because the food sanitation is the way of life. If you prepare the food in a very hygienic and sanitized way, the food will not cause any poisoning or infection in an individual.

Then a number of gastrointestinal disorders are contaminated through water or food. So all the water-borne infection and food-borne infections are generally carried through the water. So things like, I mean, illness like typhoid etc., are also carried by water and cholera, diarrhoea, the simple cold, cough everything is contaminated through the food and water.

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Spread of diseases through fecal contamination



A spread of disease through faecal contamination is if the person is a a diseased person, he will go and excrete the faeces in a field, which if this can be flown with water into the stream of water or through the hands if the person does not wash the hands properly, it can be spread through the (inaudible 09:43). He will come and again touch the food. Therefore, the food can be contaminated.

Then flies, they can reach the faeces, and then again come and touch the food where it can contaminate, and the soil, soil where he excretes when -- again, when the crop is grown there, the bacteria also grows into the soil. Then these are the various ways how the food is contaminated, and these organisms enter into a new victim and make him a sick person. That is how the communicable diseases are spread.

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Now food contamination may be contaminated if water is not potable, if the soil is not removed, and the utensils are not cleaned properly, and you have unhygienic habits like without washing hands, you touch the food, you just go and sneeze on the food, cough on the food, and clean your nose before while preparing the food. Then in all these cases you have communicable diseases and a person who is having communicable diseases will definitely spread the disease to the others.

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Equipment

- It is necessary that all equipment coming in contact with food should be kept clean
- They should be scrubbed, cleaned with detergent & water then rinsed with potable water
- The equipments are dipped in hot water at 80°C for at least 30 seconds or more & then drain dry

Now the equipment, so all the equipment coming in contact with the food should be kept clean, like the jars of the mixi, the blenders, the grinders, the knives etc., should be very clean. So they should be scrubbed, cleaned with detergent and water. And finally, they should

be rinsed with portable water, and the equipment which can be dipped into hot water can just be dipped into water of 80 degrees centigrade at least for 30 seconds or more and removed so that whatever food material is remaining will be cleaned.

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- Parts of blenders, mixers should be inspected after cleaning to ensure that there is no food material remaining
- Use separate cutting boards for different foods (meat- veg)
- Prepare raw foods in separate area from fresh and ready to eat foods

Then you can remove the parts of the blenders, everything can be separated, and see that there is no food material remaining in the jar, and it is perfectly clean to be used for the next time. Then use separate cutting boards when you cut meat and vegetables. The same cutting board cannot be used because meat has lot of microorganisms, which can spread into the vegetables. Then prepare raw foods in separate area from fresh and ready to eat foods.

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- Clean & sanitize equipment, work surfaces & utensils after preparing each foods
- Use specific containers for various food products
- Make sure cloth and paper towel use for wiping spills are not used for any other purposes

Then clean and sanitize the equipment that is used. The work surface should be cleaned after the entire cooking part is over, because when the food is remaining there, the bacteria are attracted to that place and increase in number and the utensils all should be cleaned immediately after preparing the dish. Then use specific containers for various foods and make sure that cloth and paper towel is used for wiping the spills and the cloth that is used for wiping the spill is again clean and used -- and not used repeatedly so that it carries so many microorganisms.

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Control of insects & rodents and common insects contaminating foods

- Rodents which include rats, mice & bandicoots may also be carriers of diseases such as plague



And control of insects and rodents is very important, so, because common insects that are contaminating foods. You have so many things running around in homes, like rats, mice,

bandicoots. They carry so much of infections in their hair, in their saliva with -- along with their legs and all. And the house fly, which moves from this place to that place and contaminates food. And cockroaches are one more very bad insects, which will move on the food and on everything and contaminate the foods. And there are many small insects, which will also help in the spoilage of food.

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Preventive measures to exclude the entry of insects

- Keeping the prepared food in cupboards with wire-netting
- Filling cracks, fissures in the walls & flooring
- Covering drains, holes with wire gauze
- Spraying or dusting with an pesticide in home

So how to prevent and the entry of these insects? So you put the prepared food in cupboards where there is a wire meshing so that the insects, rats and mice cannot enter into the cupboards, and you put the food that is prepared on with a cover. It is -- it should not be left open. Then filling the cracks, fissures on the wall and flooring so that small insects, and ants, and the cockroaches do not crop up, and covering the drains, holes with the wire gauze so that from the drainage the cockroaches do not enter into the kitchen. Then spraying or dusting the house with a mild pesticide which will neither affect the children nor -- at the same time it will stop the insects from entering into the house.

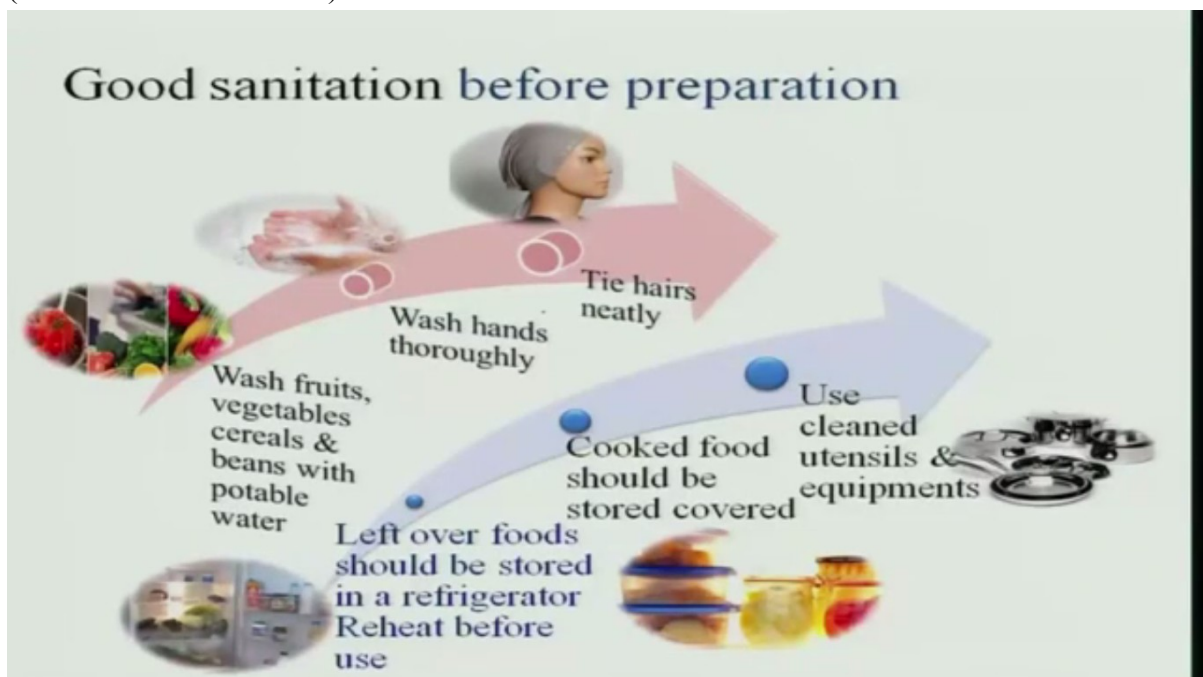
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- Fumigation may be resorted to in large godowns, factories as it destroys insects & rodents
- Insecticides are poisonous must be used in very small amount only when needed

Then sometimes fumigation also may be resorted when in large godowns where large quantities of food are stored and factories so that it destroys the insects and rodents. All the food factories should be fumigated once in a while to clear the insects and rodents.

Then insecticides, since they are poisonous, they must be used in small amounts and only when they are needed.

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Now good sanitation before preparation. You should tie the hair, wash the hands properly, wash all the fruits and vegetables, and the cereals and whatever material that is to be cooked thoroughly before cooking. Then use clean whistles and equipment. Then before cooking

also, they should be washed again. Then cooked food should be covered properly using proper lids and leftover food should be stored in the refrigerator and reheated just before use.

If you follow all these conditions, then the food remains hygienic and it is very good for individuals who are eating the food. Therefore food sanitation and hygiene should be maintained very well so that the family is healthy and having a good food. There is no spread of communicable diseases and there is no extra expenditure on medical cost because of eating bad food. Thank you.