Unit 16: Safe Food Production and Post harvest Handling

Food Safety Hazards and Health Risks

1. Food Safety Hazards:

Food safety hazards can be categorized into four primary types:

- **Biological Hazards:** Contamination by microorganisms such as bacteria, viruses, and parasites. These microorganisms can be found in the air, food, water, animals, and human bodies. Examples include:
    - **Salmonella:** Found in eggs, poultry, and unpasteurized milk.
    - **Norovirus:** Common in shellfish and ready-to-eat foods.
    - **E. coli:** Found in undercooked beef and unpasteurized milk.
    - **Listeria:** Present in deli meats and unpasteurized dairy products.
- **Chemical Hazards:** Involves harmful substances in food. These can be naturally occurring or added during processing. Examples include:
    - **Mycotoxins:** Produced by fungi on crops.
    - **Pesticides:** Used in agriculture to control pests.
    - **Marine Toxins:** Accumulated in fish and shellfish from algae.
- **Physical Hazards:** Foreign objects in food that can cause injury or illness. Examples include:
    - **Natural:** Bones in fish or stems in fruits.
    - **Unnatural:** Metal fragments or pieces of plastic.

2. Sources of Food Contaminants:

Contamination can come from various sources:

- **Water, Air, Dust:** Can introduce contaminants to food.
- **Equipment, Sewage:** May cause cross-contamination.
- **Insects, Rodents:** Can carry pathogens.
- **Employees:** Improper handling can lead to contamination.
- **Soil and Animals:** Can introduce contaminants into raw materials.

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3. Link Between Food Safety and Nutrition:

Safe food handling is crucial for maintaining the nutritional quality of food. Contaminated food can cause diseases like diarrhea and meningitis, which affect overall health and nutrient absorption. Ensuring clean food helps preserve its nutritional value and prevents health risks.

4. Indigenous Knowledge in Safe Food Production:

Traditional methods are used to prevent post-harvest losses and ensure food safety:

- **Storage Methods:**
  - **Underground Storage (Pit):** Used in dry regions to protect grains.
  - **Above-Ground Storage:** Structures like the Gombissa are used for storing maize.
- **Pest Management:**
  - **Botanicals:** Plants used as natural pesticides.
  - **Wood Ash:** Applied to protect stored grains.
- **Processing Techniques:**
  - **Smoking, Fermentation:** Used for preserving animal products like milk and meat.

Unit Summary:

- **Food Safety Hazards:** Understand biological, chemical, and physical hazards.
- **Contamination Sources:** Major sources include water, air, and pests.
- **Food Safety and Nutrition:** Proper handling maintains food quality and prevents health issues.
- **Traditional Methods:** Indigenous knowledge helps in safe food production and storage.

By understanding and addressing these aspects, we can ensure safer food practices and better health outcomes.