Nutrition and Dietetics

Food Microbiology and Safety [UGNAD17606:].

~~USFB Food Microbiology and safety~~

(CREDITS: THEORY-4, PRACTICAL-2)

Unit-I : Food safety- Basic concepts.

- Food safety and importance of safe food.
- Factors affecting food safety (physical, biological and chemical).
- occurrence, morphology and growth of bacteria
- occurrence and morphology of moulds and yeasts
- Emerging food safety hazard (prions).

Unit-II: Food Spoilage

- Factors responsible for food spoilage.
- Chemical changes due to food spoilage.
- Spoilage of different foods: Meat, poultry and fish, fruits and vegetable, milk

Unit- III: Food Hazards of microbial origin.

- Food borne diseases: definition and types
- Food borne intoxications (staphylococcal poisoning, Bacillus cereus poisoning, Botulism).
- Food borne infections (salmonellosis, shigellosis, Hepatitis A).
- Food borne toxic infections (Clostridium perfringens gastroenteritis, Cholera).
- Mycotoxins- (Aflatoxicosis, ergotism).
- Food borne diseases due to naturally occurring toxicants (Lathyrism, Epidemic dropsy).

Unit - IV: Hygiene and sanitation in Food service establishments.

- Sanitation in food service establishment (cleaning agents, disinfectants or sanitizers, waste disposal).
- Health status of food handlers and personal hygiene.

Practicals:

1. Morphological study of various prepared slides.
   - Bacteria (Bacillus, coccus, vibrio, spirilla)
   - Yeast (Reproductive and vegetative)
   - Moulds (Reproductive and vegetative).

2. Sterilization of various equipments/ glassware used for microbiological work.

3 Preparation of bacterial smear.

4. Gram staining of bacteria.

References:

1) Food Microbiological by W. C. Frazier: Tata Mc Graw Hill

2) Modern Food Microbiology by James M. ray; CBS

3) Bacteriology by Salle

4) Standard Methods for Waste Water Analysis by APHA

5) Basic Food Microbiology: Bannett Chapmen and Hall

6) Essentials of Microbiology by K.S. Bilgrami; CBS

7) Basic Good Microbiology; Bannett Chapmen and Hall

8) Essentials of Microbiology by K.S. Bilgrami; CBS