EXTENDED LECTURE OUTLINE

FSC 322 Bakery, Confectionary and Snack Foods (2+0)

- Introduction and significance of food toxicology: Terminologies used in food toxicology, Origin of toxicants in foods,General Principles of Toxicology, Classification of toxicants based on the origin of the toxin as 1) Endogenous/inherent food plant toxicants 2) Naturally occurring toxicants and 3) Synthetic toxicants.

- Food poisoning by endogenous/inherent food plant toxicants such as Lectins, Glycoalcholides, Oxalates, Synogenicglycocides, Trypcin inhibitors, Bio active amines, Purines, Salicylates, Pyrrolizidine alkalides, Carrageenan, B-Thujone, Hypericin, Goitrogens, Erucic acid, Coumarians, Furocoumarians, Amylase inhibitors, Anti Thyamin compounds, Zucchini and Cucurbitacians, Phytates and phytic acids, Hypoglycin, Safrole, Myristicin and Japaneese star anise and their causative agents, Food sources, signs, symptoms of toxicity and preventive measures

- Fungal toxins:Aflatoxins, Ochratoxins, Patulin, Cyclopiazonic acid, Zearalenone, Trichothecenes, Fumonisins, Moniliformin and Other mycotoxins and their causative agents, food sources, signs, symptoms of toxicity and preventive measures

- Sea food toxins: Scombrotoxic fish poisoning, Ciguatera poisoning, Shellfish poisoning, Paralytic shellfish poisoning, Neurotoxic shellfish poisoning and Amnesic shellfish poisoning and their causative agents, food sources, signs, symptoms and preventive measures

- Food borne microbial infections and intoxication by*Bacillus cereus, Clostridium perfringens, Clostridium botulinum, Staphylococcus aureus, Campylobacter jejuni, Listeria monocytogenes,Escherichia coli,Salmonella,Vibrio cholera and Shigella*and their characteristics,food sources, signs, symptoms and preventive measures

- Chemical toxins-pesticides,Classification of pesticides based on target pests and based on chemical structure. Pesticide residual effects on human health their mode of action, signs and symptoms and Safe level of pesticide residue for following pesticides:Organochlorine pesticides, Organophosphate compounds, Carbamate pesticides and Pyrethroid compounds

- Chemical toxins - metallic and radioactive materials, their mode of action, signs and symptoms of toxicity and regulations for the following materials:Mercury, Lead,Arsenic, Cadmium, Chromium, Copper and nickel

- Food packaging material and potential contaminants, hazards of packaging material, contamination during storage and transportation for the following packaging materials Phthalates, Bisphenols and aluminum and different cookwares

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