

TECHNOLOGY OF FOOD PRODUCTS-I

Full Marks: 100

1. Introduction 4
 - 1.1 Production of grains, legumes & oilseeds.
 - 1.2 Post-harvest handling of grains, legumes & oilseeds.
 - 1.3 Formation of grain seeds.
2. Physical properties of grains, legumes & oil seeds.
 - 2.1 Geometrical properties-Shape, size, volume, roundness, sphericity.
 - 2.2 Gravimetric properties -Bulk density, specific gravity, 1000 kernel weight.
3. Structure of Grain:
 - 3.1 Structure of wheat, Nutrition distribution, chemical composition.
 - 3.2 Structure of rice, Nutrition distribution, chemical composition.
 - 3.3 Structure of Maize.
4. Wheat Milling:
 - 4.1 Varieties, classification and quality.
 - 4.2 Milling
 - 4.2.1 Pre milling operation-separation & surface, cleaning, conditioning & grading.
 - 4.2.2 Attrition mill, Hammer mill.
 - 4.2.3 Modern flour milling: white flour: gradual reduction process, extraction rate, milling by roller.
5. Wheat Flour:
 - 5.1 Flour quality, flour strength, gluten determination
 - 5.2 Flour bleaching & maturation, flour for various uses
6. Dough & its properties 8
 - 6.1 Dough formation and structure, gas retention, water absorption alveograph, farinograph, extensograph
7. Technology baking: 12
 - 7.1 Bread, Biscuits, Cake
 - 7.2 Technology of pasta products & Instant noodles
8. Rice:
 - 8.1 Varieties, classification
 - 8.2 Milling

8.2.1 Factors affecting the milling yield and breakage

8.2.2 Traditional & modern milling system

Introduction, development of milling system, Huller & Hullers mill, Sheller & modern milling

9. Parboiling of paddy. 12

9.1 Traditional and modern system of parboiling.

9.2 Cooking quality of rice, processed food from rice, enrichment & ageing

10. Maize: 6

Varieties of classification, dry milling of maize, grits of corn flakes.

11. Malting 4

Malting of barley, sorghum & millets

12. Legumes 14

Varieties, structure & chemical composition, amino acid patterns, anti-nutritional & toxic factors in legumes of oilseeds, Processing of legumes, wet methods, dry methods & modern methods of Dhal milling, cooking of Dhal.

13. Extraction of oil from oils seeds. 6

Production of hydrogenated fat and refines oils uses of oilseeds meal & cakes.

14. Detail of protein solubility: Technology of vegetables protein concentrates & isolates. Funtionality of proteins and protein products, protein rich foods preparation, meat analogs and textured protein products, processing methods of infant & textured protein products, processing methods of infant & weaning foods based on protein concentrates & isolates.

Practical:

1. Determination of physico-chemical properties of wheat rice and coarse grains
2. Experimental milling of wheat and rice
3. Experimental baking-bread, biscuits, cakes and pastries.
4. Experimental parboiling of rice, experimental expeller processing of oilseeds, experiments on solvent extraction.
5. Visit to cereal industries.
6. Tofu preparation.
7. Production of protein concentrate & isolates.

Textbooks:

1. N.L Kent, Terminology of Cereals.
2. S.Bandhopadhyan & N.C Roy .Rice Process Technology.
3. K.M Sahay & K.K Singh. Unit Operations of Agricultural Processing.
4. P.Pillaiyar. Rice Postproduction manual.