TECHNOLOGY OF CEREALS, PULSES AND OILSEEDS

THEORY

Paper No. : 7
Maximum Marks : 150
Credits : 4
Teaching Period : 4 Theory + 1 Students' Presentation
Teaching Load : 48 Theory Periods + 12 Presentations / Semester

Objectives

- To teach technology of milling of various cereals
- To impart technical knowhow of pulses and oilseeds refining

CONTENTS

UNIT 1 TECHNOLOGY OF CEREALS

Introduction **(chap 1,2&3, Kent)** **(2 lectures)**
Wheat --Types , milling, flour grade, flour treatments (bleaching, maturing), flour for various purposes, Products and By-products. **(Chap 4,6,7,8&9, Kent)** **(7 lectures)**

Rice – Physicochemical properties , milling (mechanical & solvent extraction), parboiling, ageing of rice, utilization of by products. **(Chap 15, Kent)** (**6 lectures)**

Corn – Milling (wet & dry) , cornflakes, corn flour **(Chap 16,Kent)** **(4 lectures)**

Barley- Milling(pearl barley, barley flakes & flour) **(Chap 12, Kent)** **(3 lectures)**

Oats – Milling (oatmeal,oatflour & oatflakes) **(chap 13, Kent)** **(3 lectures)**

Sorghum and millets – Traditional & commercial milling (dry &wet **)** **(4 lectures)**
(Chap 17, Kent)

Rye and triticale—milling (flour),uses **(Chap 14, Kent)** **(2 lectures)**

UNIT 2 TECHNOLOGY OF PULSES (Chap 13, Chakraverty) (4 lectures)

Milling of pulses, Dry milling, Wet milling, Improved milling method

UNIT 3 TECHNOLOGY OF OILSEEDS (Chap 14, 15, 16, Chakraverty) (9 lectures)
Introduction, Extraction of oil and refining, Sources of protein (defatted flour, protein concentrates and isolates), properties and uses, protein texturization, fibre spinning

UNIT 4 ALCOHOLIC BEVERAGES (Chap 12.6, Manay) (4 lectures)
Beer
Wine
Distilled Spirits

Recommended Readings:

1. Kent, N.L. 2003. Technology of Cereal, 5th Ed. Pergamon Press.
2. Chakraverty. 1988. Post Harvest Technology of Cereals, Pulses and Oilseeds, revised Ed., Oxford & IBH Publishing Co. Pvt Ltd.
3. Marshall, Rice Science and Technology. 1994. Wadsworth Ed., Marcel Dekker, New York.
4. Manay, S. and Sharaswamy, M. 1987. Food Facts and Priniciples.Wiley Eastern Limited.

PRACTICALS IN TECHNOLOGY OF CEREALS, PULSES AND OILSEEDS

Maximum Marks : 50
Credits : 2
Teaching Period : 4 / Week
Teaching Load : 48/Semester

CONTENTS

1. Physical characteristics of Wheat.
2. Estimation of Gluten Content of flour.
3. Estimation of Pelenske Value of flour.
4. Estimation of Potassium Bromate in flour.
5. Fermenting power of yeast.
6. Physical Characteristics of Rice and paddy
7. Cooking characteristics of rice.
8. Determination of sedimentation power of flour

Recommended Readings:

1. Kent, N.L, Technology of Cereal, 5th Ed. Pergamon Press, 2003
2. Chakraborty, Post Harvest Technology of Cereals, Pulses and Oilseeds, revised Ed., Oxford & IBH Publishing Co. Pvt Ltd, 1988
3. Marshall, Rice Science and Technology, Wadsworth Ed., Marcel Dekker, New York, 1994.