

1st SEMESTER
VETERINARY TECHNOLOGY
SKILL ENHANCEMENT COURSE (SEC)
DTC122S DAIRY TECHNOLOGY-I (INTRODUCTION TO MILK AND ITS QUALITY)
CREDITS: THEORY: 2, PRACTICAL: 2
THEORY (2 CREDITS)

Learning Objective: To impart knowledge and skill about milk composition, its quality and preservation

Learning Outcome: Knowhow about basics of milk composition and its quality

THEORY

Unit 1: Status, quality and Composition

Current status and prospect of dairy industry. Introduction to milk. Composition of milk: major and minor constituents of milk. Nutritive value of milk. Physico-chemical properties of milk. Factors affecting composition of milk. Seasonal variation of milk quality. Fundamental rules for sensory evaluation, hedonic scale, score cards and their use for grading of milk and milk products.

Unit 2: Milk spoilage and preservation

Factors responsible for deterioration of milk and milk products. Methods of preserving the quality of raw milk. Microorganisms associated with milk and milk products - diseases involved including zoonotic origin diseases. Control measures to avoid milk borne diseases.

PRACTICALS (2 CREDITS)

Sampling techniques of milk, organoleptic tests, determination of fat, SNF (Solid not fat), total solids, specific gravity, protein, lactose, ash content, pH, titratable acidity, electrical conductivity. Estimation of microbial quality. Grading of milk and milk products on sensory evaluation basis. Tests and scales of sensory evaluation. Preservation methods of raw milk.

BOOKS RECOMMENDED

1. SuKumar De. 2019. *Outlines of Dairy Technology*, 46th Edition. Oxford University Press.
2. Walstra P, Wouters JTM & Geurts TJ. 2006. *Dairy Science and Technology*. 2nd Ed. Taylor & Francis group.
3. Web BH, Johnson AH & Alford JA. 1987. *Fundamental of Dairy Chemistry*. 3rd Ed. Westport AVI Publ.
4. Jennes R & Patton S. 1969. *Principles of Dairy Chemistry*. Wiley Eastern publication.
5. Directorate General of Health Services, MoHFW, Gol, New Delhi. 2005. *Manual Methods of Analysis of Foods (Milk and Milk Products)*.
6. S. Clark, M. Costello, M. Drake, F. Bodyfelt. 2009. *The Sensory Evaluation of Dairy Products*. 2nd ed. Springer Science and Business Media, LLC. DOI: 1007/978-0-387- 77408-4.
7. Milk India Foundation. *Analysis of Milk and Milk Products — A lab Manual*. 2nd ed. Biotech Books, Delhi — 110035.