

**SRI VENKATESWARA UNIVERSITY - TIRUPATI**  
**B.S.c., in DAIRY SCIENCE (MINOR)**  
**III SEMESTER**  
**(W.E.F. Academic Year 2024-25)**

**Course 5: Dairy Chemistry (Chemistry of fluid milk)**

Credits -3

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**Unit-1:** Composition of Milk: Definition of milk as per FSSAI, composition of cow milk, differences in the composition of milk from cow, buffalo, goat, sheep, human. Colostrum: Significance, Composition, difference between normal milk and colostrum

**Unit-2:** Constituents of milk: Minor and major constituents; proteins, casein, whey proteins, NPN compounds, milk fat, triglycerides, phospholipids, sterols, fat globule membrane, enzymes in milk and their significance.

**Unit-3:** Factors affecting composition and yield of milk –Species, Breed, individuality, Stage of lactation, Age of the animal, Season, Interval between milking, Stage of milking, Feed, Estruses, Exercise, Milker and Drugs.

**Unit-4:** Physico-chemical properties of milk- Colour, Flavour, Density and Specific gravity, Freezing point, Boiling point, Surface tension, Viscosity, Specific heat, Refractive index, Electrical conductivity, Germicidal property, PH and acidity, Ionic balance . Physicochemical constants of milk fat, RM value, Polenske Value, saponification value, Iodine number.

**Unit-5.** Nutritive value of milk. Platform tests; Tests for detection of adulteration of milk; Preservatives and Neutralizers. FSSAI Specifications for milk.

**III Semester**

**Course 5: Dairy Chemistry (Chemistry of fluid milk)**

Credits -1

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1. Estimation of specific gravity of milk
2. Estimation of Fat in milk
3. Estimation of SNF in milk
4. Estimation of Protein in milk using Pyne's constant
5. Estimation of acidity in milk
6. Estimation of pH in milk
7. Platform tests.
8. Tests for detection of adulteration of milk
9. Tests for Preservatives and Neutralizers.
10. Comment on the quality of given milk sample

**Reference Books**

1. Dairy chemistry and Animal Nutrition - M M Roy
2. Text of practical Dairy Chemistry - N K Roy
3. Fundamentals of Dairy Chemistry - Webb Johnson and Alfred
4. Dairy chemistry and Physics - Pieter Walstra, Robert Jenness.
5. Fundamentals of Dairy Chemistry - Noble P W