

Dairy Technology 3(2-1)

Theory

Milk: production statistics, importance, standards, major constituents. Factors influencing raw milk quality. Milk handling: manual and machine milking, farm cooling, collection, reception, analyses at different levels, transportation. Unit operations in milk processing: cream separation, bactofugation, filtration, thermization, standardization, homogenization, pasteurization, sterilization, UHT, aseptic packaging, storage, distribution, effect on milk constituents. Technology, chemistry, microbiology of industrial products: evaporated, condensed and powder milks, butter, yogurt, cheese, ice cream, *khoa*, *gulabjamun*, *burfi*, *rabri*, *paneer*, *dahi*, *lassi*, *kheer*, *desi ghee*. Milk by-products: dried whey, casein.

Practical

Milk sampling methods. Reception tests: Sensory test, sedimentation, pH, acidity; lactometer reading, clot on boiling, alcohol precipitation test, standard plate count, reductase test. Physico-chemical and microbiological analysis of milk and milk products. Tests for adulterants. Visit to commercial dairy farms and milk processing plants.

Books Recommended

1. Chandan, R.C., Kilara, A. and Shah, N. 2008. Dairy processing and quality assurance, John Wiley & Sons Inc., New York, USA.
2. Walstra P., Wouters J.T.M. and Guerts T.J. 2006. Dairy science & technology. CRC Press Taylor & Francis Group, Boca Raton, Florida, USA.
3. Winton A.L. and Winton K.B. 2006. Milk and milk products. Agrobios, Agro House, New Delhi, India.
4. Alfa Laval/Tetra Pak. 2003. Dairy processing handbook. Tetra Pak Processing System, Lund, Sweden.
5. Smith, G (ed). 2000. Dairy processing: improving quality. CRC Press Taylor & Francis Group, Boca Raton, Florida, USA.

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