Course Specifications

Hygienic Control of Milk Products

Benha University **Faculty Veterinary Medicine**

- **Program on which the course is given:** Bachelor of Veterinary Medicine
- **Department offering the course:** Department of Food Control
- **Academic year / Level:** 2nd Semester, 3rd year level (2010/2011)
- **Date of specification approval:** Ministerial decree No. 921 on 15/09/1987 (approved in this template by the Department Council on 16/10/2005)

A- Basic Information

Title: Hygienic Control of Milk Products.

Code: Vet 00635b

Lecture: 3 hours/week

Practical: 2 hours/week **Total: 5 hours/week**

B- Professional Information

1 – Overall aims of course:

Are to prepare the students to be efficient and productive members in the field of the dairy industry and dairy research institutions in Egypt to assure dairy security, quality and safety. This will be achieved through:

- Provide students with basic information about milk products technology, characteristics, standards and microbiology. Edible fats and oils characteristics to differentiate them from milk fats. Besides egg and egg product hygiene as a food of animal origin.
- Enable students to understand the hygiene adopted in dairy factories to enhance production of safe and high quality milk products.
- Enable students to understand the factors that influencing milk products excellence at factory level and ways to control them.
- Enhance the student educational experience about dairy products manufacturing, dairy plant organization, quality control systems, cleaning and sanitation, transportation, and storage of milk products.

2 – Intended learning outcomes of course (ILOs):

a- Knowledge and understanding:

a1- Describe the public health of milk products consumption as food of animal origin and know the diseases that transmitted to human.

a2- List and understand the basic laws, legislatives and ethical codes relevant to milk products hygiene.

b- Intellectual skills:

b1- Determine efficient production of milk products, characteristics of edible fats and oils, besides hygiene of egg and egg products.

b2- Analyze the sources of contamination at factory level with spoilage and/or pathogenic microorganisms and develop preventive measures through effective control of their sources of contamination.

b3- Decide proper heat treatment method that suits different milk products.

b4- Modify and enhance sanitation programs for applying in dairy factories, and during transportation, and storage.

c- Professional and practical skills:

c1- Practice the chemical and physical analysis any milk product sample.

c2- Perform methods to detect the adulterated milk products and determine the foreign material added.

c3- Diagnose any unauthorized preservative added to milk products and their defects.

C4- Manage how to distinguish high quality product from bad quality one.

C5- Train how to distinguish different microbial and/or non-microbial defects in milk products.

C6- Practice how to isolate any pathogenic microorganisms that may contaminate milk products.

C7- Write reports about the elevation of the hygienic measures and standards in dairy industries and during transportation, and reception of milk.

d- General and transferable skills

Graduate must have the ability to:

d1- Conduct a scientific research group that help improving dairy sanitation.

d2- Communicate with quality control people regarding milk quality either verbally and non-verbally.

d3- Function in a multidisciplinary team.

d4- Work under pressure and/or contradictory conditions.

d5- Organize and control tasks and resources.

d6- Adopting self-learning ethics.

d7- Utilize computer and internet skills.

D8- Visit dairy factories to understand different technologies of dairy industry.

3- Contents:

Topic	Lecture	Practical	No. of hours
Introduction and overview of milk products	2	3	5
Probiotics in dairy industry	2	3	5
Cream	2	3	5
Butter and related butter products	2	3	5
Cheese varieties and technology	2	3	5
Cheese defects and abnormalities	2	3	5
Fermented milks technology	2	3	5
Concentrated milk products	2	3	5
Dried milk and infant milk	2	3	5
Frozen desserts technology	2	3	5
Food poisoning and sanitation programs	2	3	5
Labeling and legalization	2	3	5
Value-added milk products	2	3	5
Edible fats and oils	2	3	5
Egg and egg products	2	3	5
Total	**30**	**45**	**75**

4– Teaching and learning methods:

4.1- Lectures and seminars.
4.2- workbooks, diaries, and laboratory notebooks.
4.3- CDs, slides, and video tapes.
4.4- Library searches and reporting (essay).
4.5- Computer based learning.
4.6- Posters.
4.7- Dairy farm and dairy plant visits

5- Student assessment methods:

5.1- Periodical MCQ sheets to assess student's communication with the instructor.

5.2- Reporting and discussion on field visits.

5.3- Essay on clean milk production and other subjects.

5.4- Practical examination to assess professional and practical skills.

5.5- Written examination to assess intellectual skills.

5.6- Oral examination to assess how much percentage of the overall aims is achieved.

Assessment schedule:

Assessment 1- MSQ sheets week 5 and 11.

Assessment 2- Report preparation and discussion/ visit reporting and discussion.

Assessment 3- Practical examination at the last week of the semester.

Assessment 4- Written examination at the end of the semester.

Assessment 5- Oral examination at the end of the semester and at the same day of the written examination.

Weighting of assessments

Mid-term examination	10%
Final-term examination	50 %
Oral examination	15 %
Practical examination	15 %
Semester work (including visit & discussions)	5 %
Other types of assessment (Essay and discussion)	**5** %
Total	**100%**

6- List of references:

6.1- Course notes:

workbooks, diaries, and laboratory notebooks on milk hygiene and control

6.2- Essential books (text books):

- *Dairy Technology: Principles of Milk Properties and Processes* (1999). Walstra, Geurts, Noomen, Jellema & van Boekel. Marcel Dekker, New York
- *Dairy Processing Handbook* (1995). Tetra Pak, Lund, Sweden
- *Dairy Chemistry and Biochemistry* (1998). Fox. P. F. & McSweeney, P.L.H. Blackie Academic & Professional

6.3- Recommended books:

- Applied Dairy Microbiology, Second edition, Edited by Elmer H. Marth And James L. Steele
  Marcel Dekker 2001.
- Food Plant Sanitation Edited by Y H Hui, Bernard L Bruinsma, J Richard Gorham, Wai-Kit Nip, Phillip, S. Tong and Phil Ventresca Marcel Decker 2002.
- International Handbook of Foodborne Pathogens Edited by M. D. Miliotis and J. W. Bier , Marcel Dekker 2003

6.4- Periodicals, Web sites, … etc:

- Journal of dairy research
- Journal of dairy science
- Journal of food protection
- International journal of food microbiology
- University of Guelph, Dairy Technology Education Series website http://www.foodsci.uoguelph.ca/dairyedu/home.html
- Dairy Management Inc. Website with a lot of dairy product and ingredients information. http://www.doitwithdairy.com/
- Milk Ingredient Canada, Website with a lot of dairy product and ingredients information. http://www.milkingredients.ca/DCP/index_e.asp
- Website developed by Dr. Kalab, entitled "Foods Under the Microscope", with many high-quality images of the structure of milk and dairy products http://anka.livstek.lth.se:2080/microscopy/intro.htm

7- Facilities required for teaching and learning:

- Small scale educational dairy plant.
- Dairy microbiology laboratory.
- Chemicals and reagents used for milk examination.
- Media and glass ware used for chemical and microbiological examination of milk.

Course coordinator:

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Head of Department

Professor: Hamdy Abdel Samei Mohamed

Date: / /