

**SEMESTER-V**  
**COURSE 15 B: LIVE STOCK MANAGEMENT -II**  
**(DAIRY PRODUCTION AND MANAGEMENT)**

Theory

Credits: 3

3 hrs/week

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**LEARNING OUTCOMES:**

Students at the successful completion of the course will be able to

- Identify and suggest the suitable housing system for the dairy farming
- Understand management practices for the dairy farming
- Learn the process of milk pasteurization
- Prepare cream from milk

**SYLLABUS:**

**Unit-1:** of Housing of Dairy cattle- Loose Housing and Conventional Dairy Barns. Drawing of layouts for dairy cattle dwellings; Criteria for selecting site for establishing Dairy farm buildings; Water requirement of dairy animals. Systems

**Unit-2:**

Management of different classes of Dairy animals- Milk producing animals, pregnant animals dry animals, heifers and calves. Management practices for Dairy farm; Identification, Dehorning, Castration, Deworming, Vaccination, Disinfection, and Milking.

**Unit-3:**

(a) Pasteurization of milk: Definition, objects of pasteurization, objections to pasteurization, Principles of heat exchange. Methods of pasteurization: LTLT, HTST and Uperization.  
(b) Sterilization of milk. Homogenization: Factors influencing homogenization

**Unit- 4:**

Market milk: Toned milk, double toned milk, Reconstituted milk, Standardized milk and fullcream milk–Standards and methods of manufacture.

**Unit- 5:**

Cream: Types of cream, composition, methods of cream separation, gravity and centrifugal methods, types of cream separators, factors affecting fat losses in skim milk and fat percentage in cream.

**REFERENCES:**

1. Textbook of Animal Husbandry-G C Benarjee
2. Handbook of Animal Husbandry –ICAR Edition
3. Principles and practices of Dairy Farm–Jagdish Prasad

**web resources:**

4. <http://ecoursesonline.iasri.res.in/course/index.php?categoryid=42>
5. <https://vetsebooks.blogspot.com/p/e-books.html>
6. <https://www.basu.org.in/study-materials/veterinary-science/>
7. <https://vikaspedia.in/agriculture/livestock/cattle-buffalo/breeds-of-cattle-buffalo>

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**SEMESTER-V**  
**COURSE 15 B: LIVE STOCK MANAGEMENT -II**  
**(DAIRY PRODUCTION AND MANAGEMENT)**

Practical

Credits: 1

2 hrs/week

**LEARNING OUTCOMES:**

On successful completion of this practical course, student shall be able to:

- Design a model dairy farm layout
- Understand procedure of milk pasteurization at milk processing centers
- Identify various important management practices in dairy farming

**SYLLABUS:**

1. Dairy Farm layout (In the laboratory student has to sketch a dairy farm with all its components)
2. Identification of cows (students have to identify the breeds of cows from the images/charts –have to identify any two breeds in the vicinity of the college/ their locality).
3. Dehorning of calves : (Method - protocol- precautions)
4. Castration of bulls (Method – Apparatus- Time-importance)
5. Deworming of dairy cattle: (Schedule – method- benefits )
6. Pasteurization of milk (Batch Method- procedure- Observation)
7. Sterilization of milk (In bottle sterilization- procedure – protocol)
8. Cream separation (By gravity method- procedure- hands on experiment)

**REFERENCES:**

1. Handbook of Animal Husbandry –ICAR Edition
2. Dairy farm layout : <https://www.youtube.com/watch?v=dmukHUEUvKc>
3. Dehorning procedure : <http://www.omafr.gov.on.ca/english/livestock/dairy/facts/09-003.htm>
4. Castration of bulls: <https://vikaspedia.in/agriculture/livestock/general-management-practices-of-livestock/castration-of-ruminants>
5. Deworming: [https://kvk.icar.gov.in/API/Content/PPupload/k0347\\_10.pdf](https://kvk.icar.gov.in/API/Content/PPupload/k0347_10.pdf)
6. Pasteurization of milk : <http://www.jnkvv.org/PDF/08042020170652part%203.pdf>
7. <http://ecoursesonline.iasri.res.in/mod/page/view.php?id=1690>
8. Cream separation: <http://ecoursesonline.iasri.res.in/mod/page/view.php?id=147910>

**Co-Curricular Activities**

**a) Mandatory:**

1. For Teacher: Training of students by the teacher in laboratory and field on skills of dairy management – housing-management of dairy animals of various stages- procedure of preparation of marketable milk with procedures like sterilization, pasteurization and other techniques.
2. For Student: Student shall (individually) visit a nearby dairy farm- house hold cattle rearing – make observations on aspects like housing – management – feed- milk- revenue- breed selection- qualities of breed –etc. A handwritten Fieldwork/Project work Report to be submitted in the given format.
3. Max marks for Fieldwork/Project work Report: 05.
4. Suggested Format for Fieldwork/Project work Report: *Title page, student details, index page, details of place visited, observations made, findings and acknowledgements.*
5. (IE)Unit tests.

**b) Suggested Co-Curricular Activities**

1. Sketch model dairy house with details
2. Web resources on Protocols in the management of stages of cattle
3. Properties of varieties of milk from the market observation
4. Assignment, Seminar, invited lecture, Group discussion. Quiz, Collection of Material, Video preparation etc.

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