

8. Farm Economics and Environment

The module will expose learners to the basics of dairy farm management and identify some key aspects of farm level economics that impact farm productivity and profitability. From crops to cows to cash, the dairy farm is an economic engine that has positive impacts on local communities. The second part of this series expands on dairy's local impact to provide a global view of dairy markets around the world. From price volatility to seasonal milk supplies, the world marketplace for dairy products is complex. In the last lectures of this course we will discuss the environmental implications of dairy production and strategies for nitrogen, calcium, phosphorus, and greenhouse gas emissions from dairy operations.

Application Procedure

For information on the application procedure please visit our website: www.mksu.ac.ke or Registrar Academic and Student Affairs) Office. The following documents are required:

- i. A copy of National Identity Card or Passport

Tuition fees payable to any of the following bank accounts
Kenya Commercial Bank: 1137145064
Nation Bank of Kenya: 01020078499400
Standard Chartered bank: 0152016845602

Fees Structure for Dairy Management Short Course

Tuition fee :KShs. 35,000 - Residential

Tuition fee :KShs. 25,000 - Non Residential

Mode of Study

The mode of study is flexible to accommodate all participants quarterly per year

Intake is quarterly per year in Feb, June, Oct and Dec

For further information on short courses and admissions, please contact the Department of Agricultural Education and Extension

P.o. Box 136-901100, Machakos

Email: cod.agm@mksu.ac.ke

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MACHAKOS UNIVERSITY
ISO 9001:2015 Certified

For more information

Call us on +254 723 805829

or Email us on info@mksu.ac.ke

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Machakos, Kenya



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SCHOOL OF AGRICULTURAL SCIENCES
DEPARTMENT OF AGRICULTURAL
EDUCATION & EXTENSION

PROGRAMME
FOR

Short Course in:
Dairy Management

Vision

A preferred University of Scholarly Excellence Scholarship and Service delivery

Mission

Provide Scholarly Education through Training Research and Innovation for Industrial and socio-economic transformation of our communities.

Philosophy

Provide transformative leadership in Teaching, Training, Research, Innovation, Industrial and Technology transfer for wealth creation.

About the Course:

Most milk in the world, about 85%, is produced from cattle. However, water buffaloes, goats, sheep, and camel are also dairy animals. Among dairy-producing countries there are varied methods to generate milk with highly variable productivity and efficiency. How has this efficiency been achieved? What methods are necessary to ensure production of high quality milk? How do we balance milk production efficiency with animal health and environmental protection and why is producing milk efficiently and sustainably so important?

Purpose: to provide practicing and potential dairy producers with sufficient information and knowledge to allow for dairy farming as business, in a “*learning by doing*” environment

Objectives: to learn about all aspects of dairy farming for high production of clean, safe and quality milk. Efforts will be dedicated to develop a business plan to demonstrate if they can make money out of a dairy farming enterprise operation under their current production conditions.

Learning outcomes:

At the end of the course, learners should be able to:

- a) Have an understanding of all aspects of dairy management such as genetics, nutrition, reproduction, animal health, farm economics,
- b) Apply routine management practices – housing, deworming, hoof trimming, clean milk handling and bio-safety in their dairy farms.

Eligibility –

The course on Dairy Management is useful to those who are working in the dairy industry or who want to build their career as entrepreneurs along the dairy value chain including youth and women, farmer groups, individuals as well as development partners

Mode of delivery: a team of experienced trainers have been prepared to guide the learners through all aspects of producing and managing dairy. The course will be delivered in a “*learning by doing*” approach and supported by 'hands on' practical work, visual demonstrations and a manual that will have diagrams, photographs and illustrations for ease of imparting skills.

Course Overview: With a certificate course in Dairy Management offered at Machakos University, you will gain a broad and comprehensive understanding of all aspects of dairy management such as genetics, nutrition, reproduction, animal health, farm economics, and sustain ability of dairy production systems. There's something here for everyone whether you are just looking for the basics or have years of experience in dairy farming.

Course Syllabus:

1. Orientation and Dairy Genetics

In the Dairy Genetics module, you will learn about the different breeds of dairy cattle, their popularity and how performance varies from one breed to the next. Participants will learn about the technologies that have helped to accelerate genetic gain in dairy cattle such as artificial insemination and genomic testing.

2. Nutrition Basics, Requirements, and Feeding of Lactating Cows

This module will introduce learners to the principles of animal nutrition, basic nutrients and their metabolism, sources for these nutrients in a dairy diet, the anatomy of the digestive tract of a ruminant animal, the wonderful world of the rumen microbes, and major end-product of ruminal fermentation.

3. Calf and Heifer Nutrition and Feeding of Dry Cows

In this module, we will discuss the development of the calf's digestive system, learn how important colostrum is for the immune system, and the nutrients the calf needs to be healthy and grow well. We will discuss critical phases of growth for the dairy heifer, the importance of good facilities, and how nutrition plays an important role in getting a healthy well grown heifer ready to be bred and prepared to have her first calf.

4. Forage Production and Pasture Management

Pasture and fodder production is key to sustainable dairy production. Participants will learn about what forages are, why they are important and the multiple roles they play on the dairy farm. We will also review some of the basic management considerations that are involved in the establishment; production and harvesting of pasture and fodder crops.

5. Feeds, Hay and Silage Making, and Feed Processing

This module will cover feeds and feed resources commonly fed to dairy cows and feed processing. We will first discuss the feeding characteristics of forages such as maize silage, grass and small grain silages, will then move to concentrate feeds that provide energy or protein in a dairy ration, and at the end will discuss feed additives. You will also learn about the most important factors in making high quality hay and silage for dairy cows. Additionally, we will introduce you to total mixed rations (TMR), processing methods designed to increase the nutritive value of forages, the importance of particle size and effective fiber in dairy rations, and most common processing methods for cereal grains and oilseeds. At the end, we will discuss how to read and understand forage analysis reports.

6. Dairy Reproduction

This module will expose learners to the basic concepts related to reproduction on dairy farms. We will start with a discussion of the life cycle of the dairy cow and how to adequately prepare a heifer for her first calving. Next will be a discussion on the basic anatomy and function of the male and female reproductive tracts. This will be followed by an overview of the bovine estrous cycle and the main hormones and ovarian structures that control the cycle.

7. Animal Health and Milk Quality

As part of the animal health component, the course will cover some key disease concerns of dairy cows and calves and management practices addressing diagnosis and prevention. Discussions will progress from first establishing disease prevention concepts of biosecurity and evolutionary change to dairy herd health programs. The next three discussions will focus on disease issues related to the calving cow, calf and lactating cow. These lessons will provide background information and practical skills in recognizing disease problems early in an effort to minimize adverse consequences on animal health and performance.