

2.0 Legal and regulatory frameworks

- KEBS guidelines
- NEMA guidelines
- Role of relevant Ministries

2.1 Computer technology

- Applied computers skills
- Use of computers in feed formulation e.g. ('Feedwin, WinFeed, PC-Dairy and 'Best-Mix')
- Statistical software packages e.g. SPSS, Genstart,

2.2 Seminars

- Technical report writing
- Research proposal writing
- Report presentation techniques

2.3 Student research pilot project

All participants will have to design, develop, and give a presentation of a potentially viable pilot-project, in which a feed mill or feed-mixing unit is described, as is utilized in the local situation within their own organisation, or as could be feasible in the future.

2.4 Educational tours

During the training programme excursions will be organized to:

- various feed milling plants, livestock farms and research institutes, related to animal husbandry and processing of feedstuffs/compound feeds;

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
Tel: 0780 651383

MACHAKOS UNIVERSITY

ISO 9001:2015 Certified

For more information

Call us on +254 723 805829
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Machakos, Kenya



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SCHOOL OF AGRICULTURAL SCIENCES

**DEPARTMENT OF AGRICULTURAL
EDUCATION AND EXTENSION**

PROGRAMME FOR

Short Course in:
Animal Feed Formulation

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:

The supply of healthy, safe, quality and affordable animal feeds in livestock production, and particularly in poultry and pig husbandry, and commercial dairy and beef farming, is of vital importance for a sustainable livestock production industry. The training programme will therefore, cover all fields animal feeds production namely: Nutritional, Technical, Organizational aspects and Policy issues.

Purpose: to provide practising and potential animal feed millers and livestock farmers with sufficient information, skills and knowledge to process healthy, safe, quality and affordable feeds in a “*learning by doing*” approach

Objectives: to learn about all aspects of animal feed milling and on-farm feed formulation for processing of healthy, safe, quality and affordable feeds using locally available feed resources.

Course outcomes:

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

- a) Have an understanding of all feed milling and feed value addition aspects for effective and efficient utilization of locally available feed resources.
- b) Apply on-farm feed formulation skills in livestock feeding management at farm level.

Eligibility –

The course on Animal Feed Milling Technology is useful to those who are working in the livestock industry or who want to build their career as entrepreneurs along the feed milling 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 Animal Feed Milling Technology offered at Machakos University, you will gain a broad and comprehensive understanding of all aspects of the different feed mill operations; make different feed formulations; identify good quality raw materials and ingredients; identify and operate different feed mill equipment and; perform cost price calculations under feed milling operations.

There's something here for everyone whether you are just looking for the basics or have years of experience in animal feed manufacturing.

Course Outline

1.1 Compound Animal Feed Production

General outline of feed mill operations:

- Reception of raw materials
- Materials handling systems
- Storage of raw materials
- Blending –Grinding-Mixing
- Delivery and storage of products
- Pelleting
- Cleaning and drying of raw materials
- Storage conditions-Quality control.

1.2 Plant Design

- Feed mill flow diagrams
- Basic Layout of feed mills
- Design of feed mills
- Capacity calculations of feed mills

1.3 Practical Feed Production

- Production of mixed feeds
- Quality assurance
- organisational aspects
- Maintenance of equipment
- Mechanical and Electrical aspects.

1.4 General aspects of Animal Nutrition

- General aspects: chemical composition, gastro intestines track, enzymes
- digestion in monogastric and ruminants: metabolism, utilization, biological value
- Energy requirements for maintenance and production.
- Additives: premixes of minerals and vitamins
 - additives for improving feed quality (emulsifiers, anti-oxidants, organic acids, dyes, odorants)

- additives to stimulate production (antibiotics, coccidiostats, growth stimulants, hormones, tranquillisers).
 - Effects of processing (soaking, heating, toasting) on feed-value.
 - Feed composition by using premixes and supplements.

1.5 Economics of Feed Production

- Intensive livestock production in developing countries
- livestock producers' problems
- increasing the efficiency of animal production systems in developing countries
- role of compounded feeds –key factors of the animal feed industry.
- Financial aspects
 - cost of producing animal feeds
 - profitability
 - the control of cash
 - capital investment and finance.

1.6 Feed mill management and organization

- Location
- target group
- production planning
- supply of raw materials
- transport, distribution and sales
- Management characteristics.

1.7 Enterprise development and analysis

- Types of enterprises – cooperative – private enterprise – government enterprise, role of the government.
- Presentation of financial results.
- Bookkeeping systems –working ledger – final accounts –control of finance.

1.8 Animal health issues

- Impurities in feeds and feedstuffs
- Micro organisms and mycotoxins in feeds
- Implications of feed additives
- Industry interventions

1.9 Environmental health and safety

- Environmental pollution by
 - Noise, dust, excess nutrients and waste disposal in air, soil and natural waters