



Republic of the Philippines

Department of Education

DepEd Complex, Meralco Avenue, Pasig City

STRENGTHENED SENIOR HIGH SCHOOL CURRICULUM

RUMINANTS PRODUCTION

Grade 11/12

Course Description:

This course equips learners with essential skills in Ruminants Production, focusing on raising dairy and meat-type ruminants according to industry standards. The course includes housing, facilities, forage production, silage making, breeding, feeding, care, management practices, pre-selling activities, and marketing. After completing the course, learners are eligible to take assessments to earn the National Certificate Level II in Animal Production (Ruminants). They may also pursue higher education or careers in the animal production (ruminants) industry.

Elective: Technical Professional

Prerequisite: None

Time Allotment: In Grade 11, 320 hours for two semesters, 8 hours per week. In Grade 12, 320 hours for one semester, 16 hours per week

Schedule: First/Second Semester

QUARTER 1

CONTENT STANDARD:	The learners demonstrate understanding on the overview, occupational safety and health standards, use and maintenance of the different tools, materials, implements, and equipment, housing, fixtures, and facilities, and forage production raising dairy and meat-type ruminants.
PERFORMANCE STANDARD:	The learners perform activities in using and maintaining of different tools, materials, implements, and equipment, farm layout, housing, fixtures and facilities and forage production in raising dairy and meat-type ruminants in following occupational safety and health standards.
LEARNING COMPETENCIES	CONTENT
1. Discuss the overview of ruminants production	Overview of Ruminants Production <ul style="list-style-type: none"> • Background of ruminants production industry • Terminologies used in ruminants production • Importance of ruminants production in agriculture and economy • Trends and challenges in ruminants production in the Philippines • Career and business opportunities in ruminants production

<p>2. Discuss the use and maintenance of the different tools, materials, implements, and equipment in ruminants production based on the industry standards</p>	<p>Tools, Materials, Implements, and Equipment in Ruminants Production</p> <ul style="list-style-type: none"> • Tools, materials, implements, and equipment <ul style="list-style-type: none"> ○ planting forages such as land preparation, management practices and harvesting ○ breeding ○ raising dairy and meat-type
<p>3. Demonstrate occupational safety and health standards in ruminants production</p>	<p>Occupational Safety and Health Standards in Ruminants Production</p> <ul style="list-style-type: none"> • Hazard and risk management • Safety regulations and biosecurity measures • Contingency measures • Animal health standards of Bureau of Animal Industry (BAI) and the Department of Agriculture (DA) • Importance of Personal Protective Equipment (PPE)
<p>4. Discuss the maintenance of housing, fixtures, and facilities for ruminants production based on industry standards</p>	<p>Housing, Fixtures, and Facilities for Ruminants</p> <ul style="list-style-type: none"> • Types of housing • Fixtures and facilities • Fence and fencing materials
<p>5. Perform forage production for feeding ruminants</p>	<p>Forage Production</p> <ul style="list-style-type: none"> • Forage species for ruminants <ul style="list-style-type: none"> ○ different forage species for different types of ruminants ○ reliable sources of quality forages • Land preparation <ul style="list-style-type: none"> ○ site selection ○ area clearing ○ tilling of land • Construction of fences • Planting forage <ul style="list-style-type: none"> ○ techniques planting forage species according to production requirements ○ perform task according to OSH

	<ul style="list-style-type: none"> • Maintain forage plants <ul style="list-style-type: none"> ○ pest control management • Fertilizer application <ul style="list-style-type: none"> ○ types of fertilizer ○ method of fertilizer application • Irrigation <ul style="list-style-type: none"> ○ water requirements for forage plant ○ methods such as sprinkler, furrow and flooding • Harvesting <ul style="list-style-type: none"> ○ methods of harvesting ○ stage of maturity ○ moisture content ○ length of cut ○ contamination ○ interval of harvesting • Record activities for forage production
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QUARTER 2

CONTENT STANDARD:	The learners demonstrate an understanding of the principles in preparation of silage and breeding in raising dairy and meat-type ruminants.	
PERFORMANCE STANDARD:	The learners perform silage making and breeding in raising dairy and meat-type ruminants in accordance with industry practices.	
LEARNING COMPETENCIES	CONTENT	
1. Demonstrate the procedures in silage preparation	Silage Preparation <ul style="list-style-type: none"> • Silage preparation <ul style="list-style-type: none"> ○ harvesting forages ○ raw materials for silage making • Silage making <ul style="list-style-type: none"> ○ gather excess forage and other materials • Ensiling <ul style="list-style-type: none"> ○ ensiling process 	

	<ul style="list-style-type: none"> ○ mixing of commercial silage additives ○ packaging of silage ● Storage of forage silage <ul style="list-style-type: none"> ○ storage requirements and condition ● Inspection and improvement of forage silage <ul style="list-style-type: none"> ○ quality silage ○ adherence to Philippine Good Agricultural Practices ● Maintenance of tools and equipment ● Record activities for silage production
2. Discuss breeds and selection of stocks in ruminants	<p>Breeds and Selection of Stocks in Ruminants</p> <ul style="list-style-type: none"> ● Breeds of small and large ruminants <ul style="list-style-type: none"> ○ different breeds and types of ruminants in the Philippines ○ characteristics and purpose ○ factors to consider in selecting breed ● Selection of stocks ● Characteristics of good stocks (dairy and meat-type)
3. Perform breeding of ruminants	<p>Breeding of Ruminants</p> <ul style="list-style-type: none"> ● Breed ruminants <ul style="list-style-type: none"> ○ requirements ○ program ● Reproductive phenomena of ruminants ● Safety measures <ul style="list-style-type: none"> ○ Occupational Safety and Health Standard on breeding operations for ruminants ● Record activities for breeding ● Post-breeding activities ● Assessing breeding performance of ruminants <ul style="list-style-type: none"> ○ observation and recording ○ reports of breeding performance ○ culling

QUARTER 3

CONTENT STANDARD:	The learners demonstrate an understanding of the principles in feeding and care and management in raising dairy and meat-type ruminants.
PERFORMANCE STANDARD:	The learners perform feeding, caring and management in raising dairy and meat-type ruminants in accordance with industry practices.
LEARNING COMPETENCIES	CONTENT
1. Perform feeding of ruminants	<p>Feeding Management of Ruminants</p> <ul style="list-style-type: none"> • Provision of basal rations • Feed supplements per animal requirements: <ul style="list-style-type: none"> ○ concentrates ○ minerals ○ vitamins • Different grazing management • Grazing capacity of the pasture
2. Perform care and management of ruminants with the assistance of license veterinarian or license animal science technician	<p>Care and Management of Ruminants</p> <ul style="list-style-type: none"> • Common diseases and their signs and symptoms • Assistance and implementation of medication programs • Animal husbandry practices <ul style="list-style-type: none"> ○ hoof trimming ○ castration ○ dehorning/ disbudding • Safety practices
3. Perform handling of dairy animals based on industry practices	<p>Handling Dairy Animals</p> <ul style="list-style-type: none"> • Housing provision for pregnant animals • Providing assistance during calving/kidding • Feeding management for lactating animals • Maintain lactating animals • Collection of milk • Rearing newly born calf/kid <ul style="list-style-type: none"> ○ system in raising calf/kid ○ common tools and materials in raising calf/kid

	<ul style="list-style-type: none"> • Feeding the calves/ kids • Separation of calves required for routine husbandry • Progress and development of calves /kids <ul style="list-style-type: none"> ○ weighing ○ visual appraisal • Reporting welfare and health management abnormalities • Judging and culling of ruminants <ul style="list-style-type: none"> ○ with abnormalities ○ deformities • Record activities in handling of dairy animals
4. Apply management practices on rearing dairy-breeder animals	<p>Management Practices on Rearing Dairy-Breeder Animals</p> <ul style="list-style-type: none"> • Housing breeder animals • Feeding management of breeder • Recording and reporting welfare and health abnormalities • Monitoring health condition of animals <ul style="list-style-type: none"> ○ weighing animals ○ visual appraisal • Animal husbandry practices <ul style="list-style-type: none"> ○ hoof trimming ○ dehorning /disbudding • Selection of adult breeder for dairy-type animals for breeding purposes

QUARTER 4

CONTENT STANDARD:	The learners demonstrate an understanding of the principles in management practices, pre-selling activities and marketing in raising dairy and meat-type ruminants.
PERFORMANCE STANDARD:	The learners perform activities in management practices, pre-selling activities and marketing of raising dairy and meat-type ruminants in accordance with industry practices.

LEARNING COMPETENCIES	CONTENT
1. Apply management practices of meat-type ruminants	Management Practices of Meat-type Ruminants <ul style="list-style-type: none"> • Types of confinement <ul style="list-style-type: none"> ○ complete confinement ○ semi-confinement • Grazing <ul style="list-style-type: none"> ○ strip ○ paddock ○ continuous • Feeding the animals: <ul style="list-style-type: none"> ○ basal ration ○ feed conversion efficiency ○ feed supplements • Grazing capacity of the pasture • Body condition scoring • Animal husbandry practices <ul style="list-style-type: none"> ○ hoof trimming ○ castration ○ dehorning/ disbudding • Selection and culling of meat-type ruminants • Recording activities of management practices of meat-type ruminants
2. Perform waste disposal management in ruminants production	Farm Waste Disposal Management <ul style="list-style-type: none"> • Importance of proper waste disposal • Reduce, Reuse and Recycles (3RS) • Methods of disposing farm waste
3. Perform marketing of ruminant products	Marketing of Ruminants Products <ul style="list-style-type: none"> • Pre-selling activities in ruminants production <ul style="list-style-type: none"> ○ Dairy animals (milk production) <ul style="list-style-type: none"> - milk checking procedure - milk pasteurization - packaging of pasteurized milk ○ Meat-type animals

	<ul style="list-style-type: none"> - fasting - proper handling and loading - preparation of transport vehicle • Direct selling <ul style="list-style-type: none"> ○ online ○ bulk ○ selective
4. Perform record management in ruminant's production	Record Keeping <ul style="list-style-type: none"> • Inventory records • Production records • Financial records

GLOSSARY

Animal Welfare Act - a law designed to protect and promote the welfare of animals and regulates the treatment of animals in various settings including research, teaching, testing, exhibition, transport, and by dealers

animal husbandry practices - methods and techniques used in the care, breeding, and management of farm animal

breed - to keep and take care of animals in order to produce more of a particular kind

biosecurity - is the prevention of disease-causing agents entering or leaving any place where they can pose a risk to farm animals and other animals

Bureau of Animal Industry - investigates, studies, and reports the cause of dangerous communicable diseases and the means of prevention, and promote the development of the livestock industries

castration - the removal of the testicles of a male animal

cattle - are domesticated bovine farm animals that are raised for their meat, milk or for draft purposes

colostrum - is the first milk your body produces during pregnancy

crossbreed - an animal produced by mating or hybridizing two different species or breeds

culling - process of selecting and removing unproductive animals from the herd

dehorning - the removal of the horn by removing the keratin-producing cells and structures at the base of the horn

dry period - the period from the date of milk production to the next calving

forage - food for animals especially when taken by grazing

hoof - the horny part of the foot of an ungulate animal

kidding - the act of the birthing process in goats

pasture - land covered with grass and other low plants suitable for grazing animals

pasteurization - the partial sterilization of a product, such as milk or wine, to make it safe for consumption and improve its keeping quality

ration - the amount of feed an animal receives in a 24-hour period

silage - grass or other green fodder compacted and stored in airtight conditions, typically in a silo, without first being dried, and used as animal feed

REFERENCES

- Animal Science I: Animal and Dairy Science Cluster. College of Agriculture, University of the Philippines Los Los Baños College, Laguna
- Animal Science 2: Animal and Dairy Science Cluster. College of Agriculture, University of the Philippines Los Los Baños College, Laguna
- Agricultural Training Institute Cordillera Administrative Region. “Tips in the Care & Management of Pigs.” Retrieve from: https://ati.da.gov.ph/ati-car/sites/default/files/Tips_in_the_Care_and_Mgt_of_PIGS.pdf
- Technical Education Skills Development Authority (TESDA) Qualification Standards Office-Training Regulation on Ruminants NC II. Taguig City, Philippines: TESDA,2013
- Bureau of Animal Industry, Mandates and Legal Basis. Retrieved at <https://www.bai.gov.ph/mandates-and-legal-basis>
- Department of Education - K to12 Agri-Fishery Arts – Animal Production (Large Ruminants) NC II Curriculum Guide May 2016 *

LIST OF TOOLS, MATERIALS, EQUIPMENT

TOOLS	MATERIALS	EQUIPMENT
<ul style="list-style-type: none"> • burdizzo • bolo • carpentry tools • ear applicator • elastrator • feeding trough • garden hose • hammer • hoof trimmer • hot iron dehorner • knife cutter • milking pails 	<ul style="list-style-type: none"> • animals (ruminants) • antibiotics • cooler • detergent • disinfectant • disposable gloves • ear tags, branding iron • forage planting materials • hairnet • hand soap/ sanitizer • ice –crushed (for water bath after pasteurization) 	<ul style="list-style-type: none"> • audiovisual • chute • double broiler • electric shearer • fire extinguisher • foot baths • forage chopper • hoof grinder • refrigerator • shredder • stancheon • water system

<ul style="list-style-type: none"> • mineral boxes • planting tools • scythe • shovel • syringes (5 to 20ml cap.) • tattoo pliers • waterer • wheelbarrow • weighing scale (1000 kg. cap.) small ruminants - 200 kg capacity 	<ul style="list-style-type: none"> • milk bottles • organic fertilizers • sacks • scrub broom • supplemental feeds • trash can • vaccines • medicines (vitamins and antibiotics) • learning materials <ul style="list-style-type: none"> - books - manuals 	<ul style="list-style-type: none"> • water tank • electric disbudder • PPE • dust coats <ul style="list-style-type: none"> - mask - gloves - boots - raincoats
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