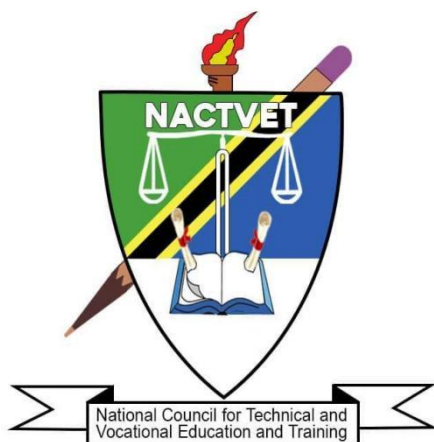


**NATIONAL COUNCIL FOR TECHNICAL AND VOCATIONAL EDUCATION AND
TRAINING OF TANZANIA**



JANUARY 2023

PROPOSED OCCUPATIONAL STANDARDS

OCCUPATION: ANIMAL BREEDING TECHNICIAN

LEVEL: NTA 6

ABBREVIATIONS

CBET	-	Competency-Based Education and Training
CIDR	-	Controlled Intravaginal Drug Release
E ₂	-	Estradiol
FSH	-	Follicle-stimulating Hormone
GnRH	-	Gonadotrophin Releasing Hormone
HCG	-	Human Chorionic Gonadotropin
LH	-	Luteinizing Hormone
NACTVET	-	National Council for Technical and Vocational Education and Training of Tanzania
NOS	-	National Occupational Standards
OS	-	Occupational Standards
OSHA	-	Occupational Safety and Health Authority
P ₄	-	Progesterone
PG	-	Prostaglandin
PMSG	-	Pregnant Mare Serum Gonadotropin (gonadotropic hormone)
SOPs	-	Standard Operation Procedures
TET	-	Technical Education and Training
TMR	-	Total Mixed Ration
TVET	-	Technical and Vocational Education and Training

GLOSSARY OF TERMS

Circumstantial Knowledge:	Detailed knowledge, which allows the decision-making in regard to different circumstances and cross-cutting issues.
Competence:	The ability to use knowledge, understanding, practical and thinking skills to perform effectively to the workplace standards required in employment.
Competency:	A description of the ability one possesses when able to perform a given occupational task effectively and efficiently.
Competency-Based Education:	An instructional programme that derives its content from validated tasks and bases assessment on the learner's performance.
Curriculum:	A description or composite of statements about "what is to be learned" by the trainee/student in a particular instructional programme; a product that states the "intended learning outcomes".
Educational/Training Programme:	The complete curriculum and instruction (what and how) that is designed to prepare a person for employment in a job or other particular performance situation.
Occupation:	A specific position requiring the performance of specific tasks – essentially the same tasks are performed by all employees having the same title. (Example: baker)
Occupational Area:	This is a broad grouping of related jobs. (Example: food service)
Occupational Standards:	Specific requirements of competence people are expected to demonstrate in a particular occupational area, including knowledge and relevant attitudes. They also act as performance tools of the assessment of the prescribed outcomes.
Occupational Analysis:	A process used to identify the tasks that are important to employees in any given occupation.
Occupational Competence:	The application of knowledge and skills to perform consistently to the standards required in the work context.
Performance Criteria:	Indicate the expected end results or outcome in form of evaluative statements.
Skills:	The ability to perform occupational tasks with a high degree of proficiency within a given occupation. Skill is conceived of as a composite of three completely interdependent components: cognitive, affective, and psychomotor.
Standards:	It is a set of statement, which if proved true under working conditions, means that an individual is meeting an expected level and type of performance.
Task Analysis:	The process of analysing each task to determine the steps, related knowledge, attitudes, performance criteria, tools and materials needed,

and safety concerns required of employees performing it.

Task: A work activity that has a definite beginning and end, is observable or measurable, consists of two or more definite steps, and leads to a product, service, or decision.

Underpinning Knowledge: This is crucial knowledge that an individual must acquire in order to demonstrate competence that is associated in performing a given task.

Verification Process: The process of having experts review and confirm the importance of the task (competency) statements identified through occupational analysis. Other questions, such as the degree of task learning difficulty are also frequently asked. This process is also sometimes referred to as validation.

1.0. INTRODUCTION

Technical Education and Training (TET) is one of the most important education sub-sectors in Tanzania, responsible for developing a skilled workforce to support the country's industrialization economic agenda. Tanzania's Development Vision 2025 intends to raise the country's economy to middle-income status. This requires a skilled workforce that is aligned with the needs of the public and private sectors of the economy. The National Council for Technical and Vocational Education and Training has begun the job of drafting Occupational Standards that will eventually be adopted as National Occupational Standards for TET in order to ensure that it meets the needs of the labour market and the country's economic agenda.

National Occupational Standards (NOS) are performance criteria that are matched with labour market demands. Each National Occupational Standard describes functions, performance criteria, and knowledge/understanding of one important function or task. They combine skills, knowledge, and attitudes to describe best practice. They are useful tools for establishing job roles, personnel recruiting, supervision, and appraisal, as well as TET standards. They're also helpful for benchmarking and harmonizing qualifications on a national and international level. Standards, in general, provide a solid framework for high-quality TET that is labour market-relevant, current and consistent in delivery across all public and private institutions.

However, it must be noted that, Occupational Standards are different from Training standards/qualifications standards. Occupational standards are defined in terms of activities performed by a person in a selected occupation (e.g., an electrical engineer designs electrical wiring circuits, and performs trouble shooting in electrical wiring) and they are usually defined by employers following procedures agreed upon by all stakeholders. Education and training standards are developed from the activities defined in occupational standards, and they include learning objectives to ensure that the necessary skills and knowledge are developed by a person to enable him or her to function at an agreed level in an occupation. Education and Training standards are used to define curricula in training institutions. It is however critical that there must be a direct link between the occupational standards and the training standards to respond to the demands of the labour market.

In TET delivery, Tanzania adopted the Competency-based Education and Training (CBET) approach. The CBET approach focuses on providing learners with the skills and knowledge required to meet the occupational standards. Occupational standards are thus the starting point for developing Competency-based Education and Training (CBET) programmes. TET institutions will

be required to benchmark their curricula with relevant occupational standards.

Occupational Standards are developed based on a given occupation's current and future demands. As a result, they serve as a means of bridging the gap between the worlds of employment and technical education and training (TET).

The Animal Breeding Technician Occupation has its own set of occupational standards. The document explains how the occupational standards were developed, as well as the scope, the occupational profile in the form of DACUM charts, and the Occupational Standards.

2.0. OCCUPATIONAL STANDARD DEVELOPMENT PROCESS

The occupational standards development process began with an examination of major documents that guide Tanzanian skill development. The 10-year *National Skills Development Strategy* (2016-2026) was one of the documents reviewed, and it outlined six (6) economic sectors that should be prioritized when developing skills development programmes.

These sectors include: Transport and Logistics, Tourism and Hospitality, Agribusiness, Construction, Energy and ICT. NACTVET labour market reports were also used in the literature review to determine the skills demand in the Tanzanian labour market as a whole.

After the literature review, a workshop comprised of expert workers and educators with substantial knowledge and experience in the occupation conducted an occupational analysis utilizing the DACUM approach to produce the occupational profile. The analysis resulted in DACUM Charts, which are attached as **Appendix 1** to this document.

The occupational standards were then developed. Experts in Occupational Analysis and the Development of Occupational Standards facilitated the workshop. Interviews, online surveys, and a stakeholder forum were used to validate the occupational standards. Engineers, supervisory technicians on the job, and experienced animal breeding technicians were key informants in the survey to discover occupational trends. This information was used to gain insight from the workplaces regarding trends and changes in the profession, including how well graduates are prepared for working in the occupation. A total of online surveys were completed by experts from the labour market across the country. Apart from the survey aiding in defining the scope of the occupational analysis, they served to engage a wide cross-section of experts in the

occupation. The stakeholders' forum was attended by participants from different parts of the country representing various companies.

3.0. THE SCOPE AND OVERVIEW OF THE OCCUPATIONAL STANDARDS FOR ANIMAL BREEDING TECHNICIANS

These standards cover a broad range of duties and tasks that can be performed by an Animal Breeding Technician. However, the occupational standards are not meant to replace individual job descriptions, they are to be used for guidance in defining skill levels and knowledge for the technician in specific settings or positions. The Animal Breeding Technician may perform tasks in a number of key areas of the occupational standards, but not necessarily in all areas. For example, in large operations other individuals may be employed or designated to perform specific tasks.

Animal breeding technicians shall work under the supervision of the animal breeding engineer or senior technician, and play an important role in the breeding, management, reproduction, epidemic prevention, feed and its utilization of livestock and poultry breeding, so as to provide premium meat, eggs and milk products for the society and meet people's needs for foods and nutrition. Animal breeding technicians are responsible for all kinds of tasks in the process of midwifery, delivery, newborn and lactating cud nursing, animal reproduction control, reproduction management, feeding and epidemic prevention of livestock and poultry. These standards cover the main responsibilities of animal breeding technicians as follows:

- a) Identifying estrus of female animals
- b) Collecting semen from male livestock and poultry
- c) Processing semen of livestock and poultry
- d) Artificial insemination and mating of livestock and poultry
- e) Controlling animal reproduction
- f) Identifying feed materials
- g) Identifying feed additives
- h) Mastering basic knowledge of animal nutrition
- i) Nutritional requirement and feeding standard of animals
- j) Domestic animal midwifery
- k) Pregnancy diagnosis of domestic animals
- l) Domestic animal delivery
- m) Egg hatching
- n) Collection of farm data
- o) Application of common farm equipment

- p) Basic breeding management of livestock and poultry
- q) Basic breeding management of commercial livestock and poultry
- r) Disinfection of livestock and poultry farm
- s) Disposal of livestock and poultry feces
- t) Immunisation of livestock and poultry
- u) Epidemic prevention measures in breeding farms
- v) Basic management of breeding farms

The occupational standards have been clustered into NTA qualification levels i.e. NTA levels 4-6.

4.0. VALIDITY PERIOD

The occupational standards will be valid for 3-5 years due to the fast-changing nature of technology. The review will proceed in the same manner as the previous one, with new occupational standards being developed based on current labour market information.

5.0. OCCUPATIONAL STANDARDS

5.1. OCCUPATIONAL STANDARDS FOR ANIMAL BREEDING TECHNICIAN - NTA 6

OCCUPATION	ANIMAL BREEDING TECHNICIAN	OCCUPATION CODE	
DUTY TITLE	ANIMAL ESTRUS CONTROL	DUTY NO.	601
TASK TITLE	COW/SHEEP ESTRUS CONTROL	TASK NO.	6011
PERFORMANCE CRITERIA	The person executing the task shall conduct cow/sheep estrus control according to the requirements for cow/sheep estrus control, to control the estrus accurately.		
RANGE STATEMENT	<p>The task will be carried out in the breeding farm under the supervision of the animal breeding engineer or senior technician.</p> <p>Available tools and equipment include:</p> <ol style="list-style-type: none"> 1. Protective articles: Disposable long-sleeve gloves, medical rubber gloves, protective clothing, masks, caps, rubber boots (shoes); 2. Tools and devices: Long tweezers, cavity opener, sponge plug placer, CIDR plug placer (for cow and sheep) and syringe; 3. Hormone drugs: GnRH, FSH, LH, PG, PMSG, P₄ (sponge plug or CIDR plug); 4. Other drugs: Iodine tincture, alcohol, potassium permanganate, cotton ball. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Follow the health and safety precautions when performing the task; 2. Select appropriate tools and equipment as required for the task; 3. Select correct drugs as required for the task; 4. Store the drugs; 5. Prepare drugs; 6. Administer different drugs; 		<p>Detailed knowledge about:</p> <p>1.0. Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1. Induce estrus; 1.2. Realize estrus synchronization. <p>2.0. Principle</p> <p>The person performing this task must be able to explain the following principle:</p> <ol style="list-style-type: none"> 2.1. Principle of exogenous reproductive hormone controlling reproductive cycle of female animals; 	

7. Observe cow/sheep estrus.	<p>2.2. Principle of realizing concentrated estrus and ovulation with drugs.</p> <p>3.0. Theories The person performing this task shall be able to explain the following contents:</p> <p>3.1. Reproductive hormone and physiological changes of animal body;</p> <p>3.2. Reproductive hormone regulating development of reproductive system.</p> <p>4.0. Essential skills</p> <p>4.1. Communication skills;</p> <p>4.2. Teamwork skills;</p> <p>4.3. Time management.</p>
DESCRIPTION OF THE END PRODUCT/SERVICE	Conducting estrus control of cows and sheep according to the requirements for production and cow/sheep estrus control.
CIRCUMSTANTIAL KNOWLEDGE	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Nutrition supply during estrus; 2. Hygiene management for livestock during estrus; 3. Pregnancy diagnosis.

OCCUPATION	ANIMAL BREEDING TECHNICIAN	OCCUPATION CODE	
DUTY TITLE	PREGNANCY DIAGNOSIS OF LIVESTOCK AND POULTRY	DUTY NO.	602
TASK TITLE	PREGNANCY DIAGNOSIS OF COWS AND SHEEP	TASK NO.	6021
PERFORMANCE CRITERIA	The personnel for this task shall conduct pregnancy diagnosis of cows and sheep according to the technical requirements for cow and sheep pregnancy diagnosis, to obtain the accurate diagnosis.		
RANGE STATEMENT	<p>The task will be carried out in the breeding farm under the supervision of the animal breeding engineer.</p> <p>Available tools and equipment include:</p> <ol style="list-style-type: none"> 1. Stethoscope; 2. Personal medical protective equipment: Disposable long-sleeve gloves, protective clothing, mask, hood, disposable medical gloves, etc. 3. Disinfected clean towel; 4. Iodine tincture, alcohol; 5. Iodine tincture; 6. Scissors; 7. Note book; 8. Lubricant; 9. Holding frame; 10. Ultrasound B, couplant; 11. Tweezers; 12. Alcohol lamp, lighter; 13. Test tube. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Follow the health and safety precautions when performing the task; 2. Select appropriate tools and equipment as required for the task; 3. Carry out pregnancy diagnosis by visual inspection, palpation and auscultation; 4. Carry out pregnancy diagnosis by rectal palpation; 5. Carry out pregnancy diagnosis of cows by rectal examination; 6. Carry out pregnancy diagnosis with a B-ultrasound diagnostic system; 7. Carry out pregnancy diagnosis with cervical mucus and urine in the laboratory; 8. Strictly comply with requirements for animal welfare; 9. Clean tools, equipment and workplace; 		<p>Detailed knowledge about:</p> <p>1.0. Methods</p> <p>The personnel performing this task must be able to explain how to :</p> <ol style="list-style-type: none"> 1.1. Make pregnancy diagnosis of cows and sheep by visual inspection, palpation and auscultation; 1.2. Mak pregnancy diagnosis of cows with the rectal examination; 1.5. Carry out pregnancy diagnosis with B-ultrasound diagnostic system; 1.6. Make pregnancy diagnosis with urine and cervical mucus. <p>2.0. Principle</p> <p>The person performing this task must be able to explain the following principle:</p> <ol style="list-style-type: none"> 2.1. Characteristics of pregnancy of cows and sheep; 2.2. Working principles of B-ultrasound diagnostic system. <p>3.0. Theories</p> <p>The person performing this task shall be able to explain the following contents:</p> <ol style="list-style-type: none"> 3.1 Key points of visual inspection, palpation and auscultation 	

<p>10. Store tools and equipment safely.</p>	<p>diagnosis during pregnancy; 3.4. Key points of rectal examination diagnosis during pregnancy; 3.5. Key points of B-ultrasound examination diagnosis during pregnancy; 3.6. Cervical mucus boiling and urine test for pregnancy diagnosis.</p> <p>4.0. Essential skills 4.1. Communication skills; 4.2. Teamwork skills; 4.3. Calculation skills; 4.4. Communication skills; 4.5. Time management; 4.6. Report writing skills.</p>
<p>DESCRIPTION OF END PRODUCTS/SERVICE</p>	<p>Accurate diagnosis of pregnancy of cows and sheep according to the technical requirements of cow and sheep pregnancy diagnosis.</p>
<p>CIRCUMSTANTIAL KNOWLEDGE</p>	<p>Detailed knowledge about: 1. Domestic animal delivery; 2. Cud nursing.</p>

OCCUPATION	ANIMAL BREEDING TECHNICIAN	OCCUPATION CODE	
DUTY TITLE	PREGNANCY DIAGNOSIS OF LIVESTOCK AND POULTRY	DUTY NO.	602
TASK TITLE	RABBIT PREGNANCY DIAGNOSIS	TASK NO.	6022
PERFORMANCE CRITERIA	The personnel for this task must be able to make an accurate diagnosis of rabbit pregnancy according to the requirements and examination methods for rabbit pregnancy diagnosis.		
RANGE STATEMENT	<p>The task will be carried out in the pre-delivery room under the supervision of the animal breeding engineer.</p> <p>Available tools and equipment include:</p> <ol style="list-style-type: none"> 1. Weighing scale; 2. Personal medical protective equipment: Disposable medical gloves, protective clothing, masks, hoods, etc.; 3. Disinfected clean towel; 4. Iodine tincture, alcohol; 5. Flat plate or rabbit cage; 6. Notebook; 7. B-ultrasound diagnostic system. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1 Follow the health and safety precautions when performing the task; 2. Select appropriate tools and equipment as required for the task; 3. Repeat mating, weighing and palpation diagnosis for pregnancy; 4. Carry out pregnancy diagnosis with a B-ultrasound diagnostic system; 5. Strictly comply with requirements for animal welfare; 6. Clean tools, equipment and workplace; 7. Store tools and equipment safely. 		<p>Detailed knowledge about:</p> <p>1.0. Methods</p> <p>The personnel performing this task must be able to explain how to conduct:</p> <ol style="list-style-type: none"> 1.1. Make pregnancy confirmation after mating; 1.2. Make pregnancy diagnosis for weight before and after mating; 1.3. Make palpation examination for pregnancy; 1.4. Carry out pregnancy diagnosis with a B-ultrasound diagnostic system. <p>2.0. Principle</p> <p>The person performing this task must be able to explain the following principle:</p> <ol style="list-style-type: none"> 2.1. Pregnancy diagnosis; 2.2. Working principles of B-ultrasound diagnostic system. <p>3.0. Theories</p> <p>The person performing this task shall be able to explain the following contents:</p> <ol style="list-style-type: none"> 3.1 Repeat mating, weighing and palpation diagnosis during pregnancy; 3.2. Diagnosis by B-ultrasound examination during pregnancy. <p>4.0. Essential skills</p> <ol style="list-style-type: none"> 4.1. Communication skills; 4.2. Teamwork skills; 4.3. Report writing skills; 	

	<p>4.4. Calculation skills;</p> <p>4.5. Communication skills;</p> <p>4.6. Time management.</p>
DESCRIPTION OF END PRODUCTS/SERVICE	Accurate diagnosis of pregnancy of the rabbit according to the technical requirements of rabbit pregnancy diagnosis.
CIRCUMSTANTIAL KNOWLEDGE	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Domestic animal delivery; 2. Cud nursing.

OCCUPATION	ANIMAL BREEDING TECHNICIAN	OCCUPATION CODE	
DUTY TITLE	PREGNANCY DIAGNOSIS OF LIVESTOCK AND POULTRY	DUTY NO.	602
TASK TITLE	PIG PREGNANCY DIAGNOSIS	TASK NO.	6023
PERFORMANCE CRITERIA	The personnel for this task must be able to make an accurate diagnosis of pig pregnancy according to the requirements and examination methods for pig pregnancy diagnosis.		
RANGE STATEMENT	<p>The task will be carried out in the breeding farm under the supervision of the animal breeding engineer.</p> <p>Available tools and equipment include:</p> <ol style="list-style-type: none"> 1. Iodine tincture; 2. Personal medical protective equipment: Disposable long-sleeve gloves, protective clothing, mask, hood, disposable medical gloves, etc.; 3. Disinfected clean towel; 4. Iodine tincture, alcohol; 5. Glass test tubes; 6. Scissors; 7. Notebook; 8. Lubricant; 9. Holding frame; 10. A-ultrasound diagnostic apparatus, B-ultrasound instrument, and coupling agent; 11. Tweezers; 12. Alcohol lamp, lighter. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Follow the health and safety precautions when performing the task; 2. Select appropriate tools and equipment as required for the task; 3. Perform inspection, palpation and auscultation to make a pregnancy diagnosis; 4. Carry out pregnancy check with A- or B-ultrasound diagnostic system; 5. Carry out a urine test to make a pregnancy diagnosis; 6. Strictly comply with requirements for animal welfare; 7. Clean tools, equipment and workplace; 8. Store tools and equipment safely. 		<p>Detailed knowledge about:</p> <p>1.0. Methods</p> <p>The personnel performing this task must be able to explain how to :</p> <ol style="list-style-type: none"> 1.1. Perform inspection, palpation and auscultation to make a pregnancy diagnosis; 1.2. Carry out a urine test to make a pregnancy diagnosis; 1.3. Carry out pregnancy check with A- or B-ultrasound diagnostic system. <p>2.0. Principle</p> <p>The person performing this task must be able to explain the following principle:</p> <ol style="list-style-type: none"> 2.1. Physiological characteristics of pig pregnancy; 2.2. Working principles of B-ultrasound diagnostic system. <p>3.0. Theories</p> <p>The person performing this task shall be able to explain the following contents:</p> <ol style="list-style-type: none"> 3.1 Diagnosis of pig pregnancy; 3.4. Essential points for diagnosis of pig pregnancy by A- or B-ultrasound examination. 	

	<p>4.0. Essential skills</p> <p>4.1. Communication skills;</p> <p>4.2. Teamwork skills;</p> <p>4.3. Report writing skills;</p> <p>4.4. Calculation skills;</p> <p>4.5. Communication skills;</p> <p>4.6. Time management.</p>
DESCRIPTION OF END PRODUCTS/SERVICE	An accurate diagnosis of pig pregnancy is made according to the technical requirements for pig pregnancy diagnosis.
CIRCUMSTANTIAL KNOWLEDGE	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Domestic animal delivery; 2. Cud nursing.

OCCUPATION	ANIMAL BREEDING TECHNICIAN	OCCUPATION CODE	
DUTY TITLE	DOMESTIC ANIMAL DELIVERY	DUTY NO.	603
TASK TITLE	DELIVERY OF COW AND SHEEP	TASK NO.	6031
PERFORMANCE CRITERIA	The person performing the task must be able to perform delivery of cows and sheep based on the physiological behavior of parturient cows and sheep.		
RANGE STATEMENT	<p>The task will be carried out in the cow and sheep delivery room under the supervision of the animal breeding engineer.</p> <p>Available tools and equipment include:</p> <ol style="list-style-type: none"> 1. Delivery room; 2. Bedding: straw; 3. Protective equipment: protective hood, mask, long-sleeve gloves, short-arm gloves, work clothes, and work boots; 4. Disinfection equipment: sprayer; 5. Environmental disinfectant: sodium hydroxide, carbolic acid, or plant ash; 6. Skin and mucosa disinfectant: iodine, Lysol, bromogeramine, or potassium permanganate; 7. Obstetric medication: oxytocin; 8. Wiping item: towels or tissues; 9. Delivery equipment: scissors, obstetric rope, obstetric apparatus, etc. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Follow the health and safety precautions when performing the task; 2. Select appropriate tools and drugs as required for the task; 3. Check mating and pregnancy records of cow or sheep; 4. Calculate the expected delivery date of cow or sheep; 5. Examine the parturient signs of cow or sheep; 6. Determine the delivery method of cow or sheep; 7. Disinfect the external birth canal of cow or sheep; 8. Take appropriate first-aid measures based on the foreseeable conditions of newborn calves or lambs; 9. Care for newborn calves or lambs; 10. Provide postnatal monitoring (intact placenta) and healthcare (bran brine soup) to cow or sheep; 11. Clean the delivery room and tools; 12. Store tools and equipment. 		<p>Detailed knowledge about:</p> <p>1.0. Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1. Calculate the expected delivery date of cow or sheep; 1.2. Use disinfectants; 1.3. Take appropriate delivery measures according to the actual situation of parturient cow or sheep; 1.4. Care for newborn calves or lambs; 1.5. Perform postnatal examination and monitoring of cows or sheep. <p>2.0. Principle</p> <p>The person performing this task must be able to explain the following principle:</p> <ol style="list-style-type: none"> 2.1. Purpose and significance of performing the delivery of cow and sheep. <p>3.0. Theories</p> <p>The person performing this task shall be able to explain the following contents:</p> <ol style="list-style-type: none"> 3.1. Correct preparation of disinfectants and application of disinfection methods; 3.2. Delivery measures taken to respond to different conditions of parturient cow and sheep; 3.3. First-aid measures taken to respond to different conditions of newborn calves and lambs; 3.4. Postnatal monitoring items and healthcare measures of cows 	

	<p>and sheep.</p> <p>4.0. Essential skills</p> <p>4.1. Communication skills;</p> <p>4.2. Teamwork skills;</p> <p>4.3. Report writing skills;</p> <p>4.4. Learning skills.</p>
DESCRIPTION OF END PRODUCTS/SERVICE	Delivery of cows and sheep is performed according to parturition practice.
CIRCUMSTANTIAL KNOWLEDGE	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Nutrition supply of newborn animals; 2. Postnatal care and nutrition supply of female animals; 3. Occupational health and safety; 4. Disposal methods of waste pollutants.

OCCUPATION	ANIMAL BREEDING TECHNICIAN	OCCUPATION CODE	
DUTY TITLE	DOMESTIC ANIMAL DELIVERY	DUTY NO.	603
TASK TITLE	DELIVERY OF RABBIT	TASK NO.	6032
PERFORMANCE CRITERIA	The person performing the task must be able to perform delivery of rabbit based on the physiological behavior of parturient rabbit.		
RANGE STATEMENT	<p>The task will be carried out in the rabbit house under the supervision of the animal breeding engineer.</p> <p>Available tools and equipment include:</p> <ol style="list-style-type: none"> 1. Delivery room; 2. Bedding: straw; 3. Protective equipment: protective hood, mask, long-sleeve gloves, short-arm gloves, work clothes, and work boots; 4. Disinfection equipment: sprayer; 5. Environmental disinfectant: sodium hydroxide, carbolic acid, or plant ash; 6. Skin and mucosa disinfectant: iodine, Lysol, bromogeramine, or potassium permanganate; 7. Obstetric medication: oxytocin. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Follow the health and safety precautions when performing the task; 2. Select appropriate tools and drugs as required for the task; 3. Check mating and pregnancy records of rabbit; 4. Calculate the expected delivery date of rabbit; 5. Perform an examination of parturient signs of rabbit; 6. Determine the delivery method of rabbit; 7. Perform postnatal examination and monitoring of rabbit; 8. Store tools and equipment. 		<p>Detailed knowledge about:</p> <p>1.0. Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1. Take health protection and safety precautions; 1.2. Calculate the expected delivery date of rabbit; 1.3. Use disinfectants; 1.4. Take appropriate delivery measures according to the actual situation of parturient rabbit; 1.5. Provide postnatal monitoring and healthcare for rabbit. <p>2.0. Principle</p> <p>The person performing this task must be able to explain the following principle:</p> <ol style="list-style-type: none"> 2.1. Purpose and significance of performing delivery of rabbit. <p>3.0. Theories</p> <p>The person performing this task shall be able to explain the following contents:</p> <ol style="list-style-type: none"> 3.1. Correct preparation of disinfectants and application of disinfection methods; 3.2. Take appropriate delivery measures based on the foreseeable conditions of rabbit in parturition; 3.3. Postnatal monitoring items and healthcare measures of rabbit. <p>4.0. Essential skills</p> <ol style="list-style-type: none"> 4.1. Communication skills; 4.2. Teamwork skills; 4.3. Report writing skills; 	

	4.4. Learning skills.
DESCRIPTION OF END PRODUCTS/SERVICE	Delivery of rabbits is performed according to parturition practice.
CIRCUMSTANTIAL KNOWLEDGE	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Nutrition supply of newborn rabbits; 2. Postnatal care and nutrition supply of female rabbits; 3. Occupational health and safety; 4. Disposal methods of waste pollutants.

OCCUPATION	ANIMAL BREEDING TECHNICIAN	OCCUPATION CODE	
DUTY TITLE	DOMESTIC ANIMAL DELIVERY	DUTY NO.	603
TASK TITLE	DELIVERY OF PIG	TASK NO.	6033
PERFORMANCE CRITERIA	The person performing the task must be able to perform delivery of pig based on the physiological behavior of parturient pig.		
RANGE STATEMENT	<p>The task will be carried out in the pig delivery room under the supervision of the animal breeding engineer.</p> <p>Available tools and equipment include:</p> <ol style="list-style-type: none"> 1. Delivery room; 2. Bedding: straw; 3. Protective equipment: protective hood, mask, long-sleeve gloves, short-arm gloves, work clothes, and work boots; 4. Disinfection equipment: sprayer; 5. Environmental disinfectant: sodium hydroxide, carbolic acid, or plant ash; 6. Skin and mucosa disinfectant: iodine, lysol, bromogeramine, or potassium permanganate; 7. Obstetric medication: oxytocin; 8. Wiping item: towels or tissues. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Follow the health and safety precautions when performing the task; 2. Select appropriate tools and drugs as required for the task; 3. Check mating and pregnancy records of pig; 4. Calculate the expected delivery date of pig; 5. Perform an examination of parturient signs of pig; 6. Determine the delivery method of pig; 7. Disinfect the external birth canal of sow; 8. Care for newborn pigs; 9. Perform postnatal examination and monitoring of sow; 10. Clean the delivery room and tools; 11. Store tools and equipment. 		<p>Detailed knowledge about:</p> <p>1.0. Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1. Calculate the expected delivery date of pig; 1.2. Use disinfectants; 1.3. Take appropriate delivery measures according to the actual situation of parturient rabbit; 1.4. Give first aid to newborn pigs; 1.5. Care for newborn pigs; 1.6. Provide postnatal monitoring and healthcare for pig. <p>2.0. Principle</p> <p>The person performing this task must be able to explain the following principle:</p> <ol style="list-style-type: none"> 2.1. Purpose and significance of performing the delivery of pig. <p>3.0. Theories</p> <p>The person performing this task shall be able to explain the following contents:</p> <ol style="list-style-type: none"> 3.1. Correct preparation of disinfectants and application of disinfection methods; 3.2. Foreseeable conditions of pig in parturition and appropriate delivery measures; 3.3. Foreseeable conditions of newborn pigs and appropriate first-aid measures; 3.4. Postnatal monitoring items and healthcare measures of pig. 	

	<p>4.0. Essential skills</p> <p>4.1. Communication skills;</p> <p>4.2. Teamwork skills;</p> <p>4.3. Report writing skills;</p> <p>4.4. Learning skills.</p>
DESCRIPTION OF END PRODUCTS/SERVICE	Delivery of pigs is performed according to parturition practice.
CIRCUMSTANTIAL KNOWLEDGE	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Nutrition supply; 2. Postnatal care; 3. Occupational health and safety; 4. Disposal methods of waste pollutants.

OCCUPATION	ANIMAL BREEDING TECHNICIAN	OCCUPATION CODE	
DUTY TITLE	DOMESTIC ANIMAL DELIVERY	DUTY NO.	603
TASK TITLE	CARE OF NEWBORN AND SUCKLING ANIMALS	TASK NO.	6034
PERFORMANCE CRITERIA	The person performing this task must be able to care for newborn animals during the suckling period according to their physiological characteristics.		
RANGE STATEMENT	<p>The task will be carried out in the delivery room and the newborn animal barn under the supervision of the animal breeding engineer.</p> <p>Available tools and equipment include:</p> <ol style="list-style-type: none"> 1. Delivery room and newborn animal barn; 2. Bedding: straw; 3. Protective equipment: protective hood, mask, long-sleeve gloves, short-arm gloves, work clothes, and work boots; 4. Disinfection equipment: sprayer; 5. Environmental disinfectant: sodium hydroxide, carbolic acid, or plant ash; 6. Skin and mucosa disinfectant: iodine, Lysol, bromogeramine, or potassium permanganate; 7. Wiping item: towels or tissues; 8. Lactation apparatus: milk pot; 9. Warming apparatus: heat lamp, thermal umbrella, and electric blanket (low-temperature winter); 10. Thermometer and stethophone; 11. Healthcare and therapeutic drugs. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Follow the health and safety precautions when performing the task; 2. Select appropriate tools and drugs as required for the task; 3. Care for newborn animals; 4. Give first aid to newborn animals; 5. Weigh and record newborn animals; 6. Number and mark newborn animals; 7. Feed colostrum to newborn animals; 8. Feed ordinary milk to suckling animals; 9. Feed forage supplement during suckling; 10. Wean suckling animals; 11. Feed and manage suckling animals; 12. Conduct health monitoring of suckling animals; 13. Clean the delivery room, newborn animal barn and tools; 14. Store tools. 		<p>Detailed knowledge about:</p> <p>1.0. Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1. Care for newborn animals; 1.2. Give first aid to newborn animals; 1.3. Use disinfectants; 1.4. Weigh and record, number and mark newborn animals; 1.5. Feed newborn and suckling animals; 1.6. Wean suckling animals; 1.7. Conduct health monitoring of suckling animals. <p>2.0. Principle</p> <p>The person performing this task must be able to explain the following principle:</p> <ol style="list-style-type: none"> 2.1. Physiological characteristics of newborn animals and suckling animals; 2.2. Physiological characteristics of newborn animals; 2.3. Physiological characteristics of suckling animals; 2.4. Characteristics of colostrum of lactating animals. <p>3.0. Theories</p> <p>The person performing this task shall be able to explain the</p>	

	<p>following contents:</p> <p>3.1. Correct preparation of disinfectants and application of disinfection methods;</p> <p>3.2. Care measures of newborn animals;</p> <p>3.3. Foreseeable conditions of newborn animals and appropriate first-aid measures;</p> <p>3.4. Method of feeding colostrum to newborn animals;</p> <p>3.5. Methods of weighing, numbering and marking newborn animals;</p> <p>3.6. Feeding and management of suckling animals;</p> <p>3.7. Conduct health monitoring of suckling animals.</p> <p>4.0. Essential skills</p> <p>4.1. Communication skills;</p> <p>4.2. Teamwork skills;</p> <p>4.3. Report writing skills;</p> <p>4.4. Learning skills.</p>
DESCRIPTION OF END PRODUCTS/SERVICE	Care of newborn animals during the suckling period is performed according to the production and development plan and their physiological characteristics.
CIRCUMSTANTIAL KNOWLEDGE	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Nutrition supply; 2. Occupational health and safety; 3. Disposal methods of waste pollutants.

OCCUPATION	ANIMAL BREEDING TECHNICIAN	OCCUPATION CODE	
DUTY TITLE	EGG HATCHING	DUTY NO.	604
TASK TITLE	MANAGEMENT OF BREEDING EGGS	TASK NO.	6041
PERFORMANCE CRITERIA	The person performing the task must be able to manage breeding eggs according to the characteristics of eggs.		
RANGE STATEMENT	<p>The task will be carried out in the chicken farm under the supervision of the animal breeding engineer.</p> <p>Available tools and equipment include:</p> <ol style="list-style-type: none"> 1. Egg trays; 2. Egg weight selection apparatus; 3. Formalin; 4. Potassium permanganate; 5. Disinfectant etc. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select breeding eggs; 2. Disinfect breeding eggs; 3. Preserve breeding eggs. 		<p>Detailed knowledge about:</p> <p>1.0. Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1. Remove unqualified eggs; 1.2. Determine the disinfection method, reagent concentration and time; 1.3. Preserve breeding eggs. <p>2.0. Principle</p> <p>The person performing this task must be able to explain the following principle:</p> <ol style="list-style-type: none"> 2.1. Quality control of breeding eggs; 2.2. Hatching rate of breeding eggs. <p>3.0. Theories</p> <p>The person performing this task shall be able to explain the following contents:</p> <ol style="list-style-type: none"> 3.1. Criteria for qualified eggs; 3.2. Criteria for abnormal eggs; 3.3. Suitable conditions for the preservation of breeding eggs; 3.4. Calculation of hatching rate of breeding eggs. <p>4.0. Essential skills</p> <ol style="list-style-type: none"> 4.1. Learning ability; 4.2. Communication ability; 4.3. Teamwork ability; 4.4. Report writing ability; 4.5. Problem solving ability; 4.6. Time management ability. 	
DESCRIPTION OF END PRODUCTS/SERVICE		Breeding eggs are selected and managed according to the characteristics of poultry eggs.	

CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: <ol style="list-style-type: none">1. Defining the scope of responsibility;2. Observing the code of conduct;3. Following the laws, regulations and policies of the agribusiness sector.
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OCCUPATION	ANIMAL BREEDING TECHNICIAN	OCCUPATION CODE	
DUTY TITLE	EGG HATCHING	DUTY NO.	604
TASK TITLE	EGG HATCHING MANAGEMENT	TASK NO.	6042
PERFORMANCE CRITERIA	The person performing the task must be able to manage egg hatching according to the standards and requirements for egg hatching and the production and development plan of chicken farm.		
RANGE STATEMENT	<p>The task will be carried out in the hatching house under the supervision of the animal breeding engineer.</p> <p>Available tools and equipment include:</p> <ol style="list-style-type: none"> 1. Incubators, egg rack trolleys, and egg trays; 2. Hatchers and hatcher trays; 3. Flushing equipment; 4. Egg candling equipment; 5. Thermometer, hygrometer, record forms, etc. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Make a hatching plan; 2. Prepare articles for hatching; 3. Check meters and test machines; 4. Disinfect the incubators and hatching house; 5. Preheat eggs before hatching; 6. Place eggs onto trays for hatching; 7. Disinfect eggs before hatching; 8. Adjust the temperature; 9. Adjust the humidity; 10. Turn over eggs; 11. Candle eggs; 12. Place eggs onto trays; 13. Picking up chicks; 14. Make records; 15. Carry out cleaning and disinfection. 		<p>Detailed knowledge about:</p> <p>1.0. Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1. Make preparations for hatching; 1.2. Use hatching equipment; 1.3. Make hatching operations. <p>2.0. Principle</p> <p>The person performing this task must be able to explain the following principle:</p> <ol style="list-style-type: none"> 2.1. Irreversibility of hatching process; 2.2. Routine operation procedures for hatching; 2.3. Assurance and control of normal embryo development. <p>3.0. Theories</p> <p>The person performing this task shall be able to explain the following contents:</p> <ol style="list-style-type: none"> 3.1. Embryo development characteristics; 3.2. Egg preheating; 3.3. Disinfection methods; 3.4. Hatching conditions; 3.5. Time and significance of egg candling. <p>4.0. Essential skills</p> <ol style="list-style-type: none"> 4.1. Learning ability; 4.2. Communication ability; 4.3. Teamwork ability; 4.4. Report writing ability; 4.5. Practical ability; 4.6. Innovation ability; 	

	4.7 Problem solving ability.
DESCRIPTION OF END PRODUCTS/SERVICE	Egg hatching and management is performed to obtain viable chicks according to the standards and requirements for egg hatching and the production and development plan of the chicken farm.
CIRCUMSTANTIAL KNOWLEDGE	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Defining the scope of responsibility; 2. Observing the code of conduct; 3. Following the laws, regulations and policies of the agribusiness sector.

OCCUPATION	ANIMAL BREEDING TECHNICIAN	OCCUPATION CODE	
DUTY TITLE	EGG HATCHING	DUTY NO.	604
TASK TITLE	HANDLING OF NEWBORN CHICKS	TASK NO.	6043
PERFORMANCE CRITERIA	The person performing the task must be able to handle newborn chicks according to their handling requirements.		
RANGE STATEMENT	<p>The task will be carried out in the chick room under the supervision of the animal breeding engineer.</p> <p>Available tools and equipment include:</p> <ol style="list-style-type: none"> 1. Chick picking equipment; 2. Chick sex identification equipment; 3. Infrared beak-trimming instrument. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Select and grade chicks; 2. Identify the sex of chicks; 3. Trim the beaks of chicks; 4. Perform chick immunization. 		<p>Detailed knowledge about:</p> <p>1.0. Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1. Grade chicks; 1.2. Identify the sex of chicks using the equipment; 1.3. Carry out beak trimming and immunization of chicks. <p>2.0. Principle</p> <p>The person performing this task must be able to explain the following principle:</p> <ol style="list-style-type: none"> 2.1. Differences between female and male chicks; 2.2. Health and safety of chicks; 2.3. Quality assurance and control. <p>3.0. Theories</p> <p>The person performing this task shall be able to explain the following contents:</p> <ol style="list-style-type: none"> 3.1. Chick grades; 3.2. Working principle of chick sex identification equipment; 3.3. Near-infrared beak trimming and immunization of chicks. <p>4.0. Essential skills</p> <ol style="list-style-type: none"> 4.1. Learning ability; 4.2. Communication ability; 4.3. Teamwork ability; 4.4. Report writing ability; 4.5. Practical ability; 4.6. Innovation ability; 4.7. Problem solving ability. 	
DESCRIPTION OF END PRODUCTS/SERVICE	Newborn chicks are handled by grading, sex identification, beak trimming and immunization to obtain qualified and marketable chicks according to their handling requirements.		
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about:		

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| | <ol style="list-style-type: none">1. Defining the scope of responsibility;2. Observing the code of conduct;3. Following the laws, regulations and policies of the agribusiness sector. |
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OCCUPATION	ANIMAL BREEDING TECHNICIAN	OCCUPATION CODE	
DUTY TITLE	LIVESTOCK AND POULTRY BREEDING MANAGEMENT	DUTY NO.	605
TASK TITLE	CATTLE BREEDING MANAGEMENT	TASK NO.	6051
PERFORMANCE CRITERIA	The person performing the task must be able to control and manage cow breeding according to the cow breeding requirements and the production and development plan of the farm.		
RANGE STATEMENT	<p>The task will be carried out in the breeding farm under the supervision of the animal breeding engineer.</p> <p>Available tools and equipment include:</p> <ol style="list-style-type: none"> 1. Pedometer for cow; 2. Estrus monitoring system; 3. Long-sleeve gloves; 4. Sterile rubber gloves; 5. Paraffin oil; 6. Crayon for cow; 7. Vaginal retractor; 8. Surgical instruments; 9. Syringes; 10. GnRH, FSH, LH, PG, PMSG and HCG; 11. Antibiotics, saline, and potassium permanganate. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able do the following:</p> <ol style="list-style-type: none"> 1. Follow the health and safety precautions when performing the task; 2. Select appropriate tools and equipment as required for the task; 3. Assess the fertility of cow; 4. Identify breeding diseases in cows; 5. Determine the cause of low fertility in bulls; 6. Manage the estrus cycle and condition of cows. 		<p>Detailed knowledge about:</p> <p>1.0. Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1. Determine the factors influencing fertility based on the symptoms of cow; 1.2. Determine the factors influencing fertility using the exclusion method; 1.3. Use routine drugs or surgeries for treatment. <p>2.0. Principle</p> <p>The person performing this task must be able to explain the following principle:</p> <ol style="list-style-type: none"> 2.1. Indicators of cow fertility; 2.2. Cow pregnancy test; 2.3. Role of reproductive hormones; 2.4. Organ changes and behavior in the stages of estrus cycle. <p>3.0. Theories</p> <p>The person performing this task shall be able to explain the following contents:</p> <ol style="list-style-type: none"> 3.1. Indicators of assessing cow fertility; 3.2. Common reproductive diseases in cows; 3.3. Factors influencing the fertility of bulls. 	

	<p>4.0. Essential skills</p> <p>4.1. Learning skills;</p> <p>4.2. Communication skills;</p> <p>4.3. Teamwork skills;</p> <p>4.4. Report writing skills;</p> <p>4.5. Calculation skills;</p> <p>4.6. Communication skills;</p> <p>4.7 Time management.</p>
DESCRIPTION OF END PRODUCTS/SERVICE	Estrus synchronization and breeding control and management of cow are performed according to the requirements for cow breeding, disease diagnosis and feeding and the production and development plan of the cow farm.
CIRCUMSTANTIAL KNOWLEDGE	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Pregnancy diagnosis; 2. Nutrition supply; 3. Livestock abortion; 4. Livestock infertility.

OCCUPATION	ANIMAL BREEDING TECHNICIAN	OCCUPATION CODE	
DUTY TITLE	LIVESTOCK AND POULTRY BREEDING MANAGEMENT	DUTY NO.	605
TASK TITLE	CHICKEN BREEDING MANAGEMENT	TASK NO.	6052
PERFORMANCE CRITERIA	The person performing the task must be able to control and manage chicken breeding according to the chicken breeding requirements and the production and development plan of the farm.		
RANGE STATEMENT	<p>The task will be carried out in the breeding farm under the supervision of the animal breeding engineer.</p> <p>Available tools and equipment include:</p> <ol style="list-style-type: none"> 1. Personal medical protective equipment: disposable gloves, protective clothing, masks, hoods and disposable medical gloves, etc.; 2. Counter; 4. Calculator; 5. Computer etc. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Follow the health and safety precautions when performing the task; 2. Select appropriate tools and equipment as required for the task; 3. Assess the fertility of chickens based on relevant indicators; 4. Determine the cause of low fertility in chickens; 5. Take various measures to improve the fertility of chickens. 		<p>Detailed knowledge about:</p> <p>1.0. Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1. Assess the fertility of chickens; 1.2. Improve the fertility of chickens. <p>2.0. Principle</p> <p>The person performing this task must be able to explain the following principle:</p> <ol style="list-style-type: none"> 2.1. Indicators of chicken fertility; 2.2. Normal chicken fertility. <p>3.0. Theories</p> <p>The person performing this task shall be able to explain the following contents:</p> <ol style="list-style-type: none"> 3.1. Indicators of assessing chicken fertility; 3.2. Measures to improve the fertility of chickens. <p>4.0. Essential skills</p> <ol style="list-style-type: none"> 4.1. Learning skills; 4.2. Communication skills; 4.3. Teamwork skills; 4.4. Calculation skills; 4.5. Problem solving; 4.6. Time management. 	
DESCRIPTION OF END PRODUCTS/SERVICE	Breeding control and management of chickens in the poultry farm is performed according to the chicken breeding requirements and the production and development plan of the poultry farm.		
CIRCUMSTANTIAL KNOWLEDGE	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Pregnancy diagnosis; 		

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| | <ol style="list-style-type: none">2. Nutrition supply;3. Management of hatching eggs;4. Handling of newborn chicks. |
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OCCUPATION	ANIMAL BREEDING TECHNICIAN	OCCUPATION CODE	
DUTY TITLE	LIVESTOCK AND POULTRY BREEDING MANAGEMENT	DUTY NO.	605
TASK TITLE	SHEEP BREEDING MANAGEMENT	TASK NO.	6053
PERFORMANCE CRITERIA	The person performing the task must be able to carry out sheep breeding management including estrus induction, estrus and treatment of breeding disorders according to the sheep breeding requirements of the farm.		
RANGE STATEMENT	<p>The task will be carried out in the breeding farm under the supervision of the animal breeding engineer.</p> <p>Available tools and equipment include:</p> <ol style="list-style-type: none"> 1. Personal medical protective equipment: disposable protective clothing, masks, hoods, disposable medical gloves, etc.; 2. Estrus control drug: GnRH, FSH, LH, PG, PMSG, and HCG; 3. Antibiotics, saline, and potassium permanganate; 4. Estrus detection instruments: sterile rubber gloves, vaginal retractor, and syringes; 5. Surgical instruments. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Follow the health and safety precautions when performing the task; 2. Select appropriate tools and equipment as required for the task; 3. Assess the fertility of sheep based on relevant indicators; 4. Determine the cause of low fertility in sheep; 5. Take various measures to improve the fertility of sheep. 		<p>Detailed knowledge about:</p> <p>1.0. Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1. Assess the fertility of sheep; 1.2. Improve the fertility of sheep. <p>2.0. Principle</p> <p>The person performing this task must be able to explain the following principle:</p> <ol style="list-style-type: none"> 2.1. Indicators of sheep fertility; 2.2. Normal sheep fertility. <p>3.0. Theories</p> <p>The person performing this task shall be able to explain the following contents:</p> <ol style="list-style-type: none"> 3.1. Indicators of assessing sheep fertility; 3.2. Measures to improve the fertility of sheep. <p>4.0. Essential skills</p> <ol style="list-style-type: none"> 4.1. Learning skills; 4.2. Communication skills; 4.3. Teamwork skills; 4.4. Calculation skills; 4.5. Problem solving; 4.6. Time management. 	
DESCRIPTION OF END PRODUCTS/SERVICE		Breeding management including estrus induction, estrus control and treatment of breeding disorders is performed according to the sheep breeding requirements.	
CIRCUMSTANTIAL KNOWLEDGE		Detailed knowledge about:	

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| | <ol style="list-style-type: none">1. Pregnancy diagnosis;2. Nutrition supply;3. Livestock abortion;4. Livestock infertility. |
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OCCUPATION	ANIMAL BREEDING TECHNICIAN	OCCUPATION CODE	
DUTY TITLE	LIVESTOCK AND POULTRY BREEDING MANAGEMENT	DUTY NO.	605
TASK TITLE	PIG BREEDING MANAGEMENT	TASK NO.	6054
PERFORMANCE CRITERIA	The person performing the task must be able to control and manage pig breeding according to the pig breeding requirements of the farm.		
RANGE STATEMENT	<p>The task will be carried out in the breeding farm under the supervision of the animal breeding engineer.</p> <p>Available tools and equipment include:</p> <ol style="list-style-type: none"> 1. Personal medical protective equipment: disposable protective clothing, masks, hoods, disposable medical gloves, etc.; 2. Estrus control drug: GnRH, FSH, LH, PG, PMSG, and HCG; 3. Antibiotics, saline, and potassium permanganate; 4. Estrus detection instruments: sterile rubber gloves, vaginal retractor, and syringes; 5. Surgical instruments. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Follow the health and safety precautions when performing the task; 2. Select appropriate tools and equipment as required for the task; 3. Assess the fertility of pigs based on relevant indicators; 4. Determine the cause of low fertility in pigs; 5. Take various measures to improve the fertility of pigs. 		<p>Detailed knowledge about:</p> <p>1.0. Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1. Assess the fertility of pigs; 1.2. Improve the fertility of pigs. <p>2.0. Principle</p> <p>The person performing this task must be able to explain the following principle:</p> <ol style="list-style-type: none"> 2.1. Indicators of pig fertility; 2.2. Normal pig fertility. <p>3.0. Theories</p> <p>The person performing this task shall be able to explain the following contents:</p> <ol style="list-style-type: none"> 3.1. Indicators of assessing pig fertility; 3.2. Measures to improve the fertility of pigs. <p>4.0. Essential skills</p> <ol style="list-style-type: none"> 4.1. Learning skills; 4.2. Communication skills; 4.3. Teamwork skills; 4.4. Calculation skills; 4.5. Problem solving; 4.6. Time management. 	
DESCRIPTION OF END PRODUCTS/SERVICE		Breeding management including estrus induction, estrus control and treatment of breeding disorders is performed according to the pig breeding requirements of the farm.	
CIRCUMSTANTIAL KNOWLEDGE		<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Pregnancy diagnosis. 	

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| | <ol style="list-style-type: none">2. Nutrition supply;3. Livestock abortion;4. Livestock infertility. |
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OCCUPATION	ANIMAL BREEDING TECHNICIAN	OCCUPATION CODE	
DUTY TITLE	SATISFACTION OF NUTRITIONAL NEEDS AND FEEDING STANDARDS	DUTY NO.	606
TASK TITLE	ANALYSIS OF NUTRITIONAL NEEDS	TASK NO.	6061
PERFORMANCE CRITERIA	The person performing this task must be able to plan the nutritional needs of livestock and poultry in different growth and development stages according to the feeding standards and nutritional needs.		
RANGE STATEMENT	<p>The task will be carried out in the farm office under the supervision of the animal breeding engineer.</p> <p>Available tools and equipment include:</p> <ol style="list-style-type: none"> 1. Computer; 2. Statistical software package; 3. Stationery; 4. Tablet PC/smart phone. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Identify the animal nutritional needs; 3. Determine the animal nutritional needs; 4. Ensure the maintenance nutritional needs of animals; 5. Ensure the nutritional needs of animals in breeding period. 		<p>Detailed knowledge about:</p> <p>1.0. Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1. Determine various nutritional needs of animals; 1.2. Ensure the nutritional needs of animals; 1.3. Apply animal feeding standards. <p>2.0. Principle</p> <p>The person performing this task must be able to explain the following principle:</p> <ol style="list-style-type: none"> 2.1. Standards for livestock and poultry breeding; 2.2. Animal nutritional needs. <p>3.0. Theories</p> <p>The person performing this task shall be able to explain the following contents:</p> <ol style="list-style-type: none"> 3.1. Expression methods of animal nutritional needs; 3.2. Determination methods of animal nutritional needs; 3.3. Factors influencing maintenance needs; 3.4. Characteristics of nutritional needs of animals in breeding period. <p>4.0. Essential skills</p> <ol style="list-style-type: none"> 4.1. Learning skills; 4.2. Communication skills; 4.3. Teamwork skills; 4.4. Report writing skills; 4.5. Calculation skills; 4.6. Communication skills; 4.7. Time management. 	
DESCRIPTION	OF	END	According to the feeding standards and nutritional needs of

PRODUCTS/SERVICE	different livestock and poultry in different periods, nutritional needs of livestock and poultry in different growth and development stages are reasonably planned, and feeding and nutritional supply are given accurately.
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: <ol style="list-style-type: none"> 1. Defining the scope of responsibility; 2. Observing the code of good conduct; 3. Observing research ethics.

OCCUPATION	ANIMAL BREEDING TECHNICIAN	OCCUPATION CODE	
DUTY TITLE	SATISFACTION OF NUTRITIONAL NEEDS AND FEEDING STANDARDS	DUTY NO.	606
TASK TITLE	CALCULATION OF NUTRITION IN FEED	TASK NO.	6062
PERFORMANCE CRITERIA	The person performing this task must be able to make nutrition matching, preparation and supply of feed in different growth and development stages according to the nutritional needs of livestock and poultry and the nutritional value of feed.		
RANGE STATEMENT	<p>The task will be carried out in the office and farm under the supervision of the animal breeding engineer.</p> <p>Available tools and equipment include:</p> <ol style="list-style-type: none"> 1. Computer; 2. Statistical software package; 3. Stationery; 4. Tablet PC/smart phone. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Identify feed components and nutritional characteristics; 2. Calculate the effective energy value in feed; 3. Calculate the amino acid content in feed; 4. Calculate the content of minerals and vitamins; 5. Calculate nutrition in commonly used roughage; 6. Prepare feed. 		<p>Detailed knowledge about:</p> <p>1.0. Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1. Identify common components in feed; 1.2. Prepare feed based on the effective energy value in feed; 1.3. Prepare feed based on basic nutritional components in feed. <p>2.0. Principle</p> <p>The person performing this task must be able to explain the following principle:</p> <ol style="list-style-type: none"> 2.1. Nutritional needs of different components in feed; 2.2. Effective energy value in feed; 2.4. Importance of amino acids, minerals and vitamins; 2.4. Differences between roughage and concentrated feed. <p>3.0. Theories</p> <p>The person performing this task shall be able to explain the following contents:</p> <ol style="list-style-type: none"> 3.1. Description and common components of feed; 3.2. Calculation method of effective energy value in feed; 3.3. Reasonable range of amino acid content in feed; 3.4. Reasonable range of mineral and vitamin content in feed; 3.5. Nutrition in commonly used roughage. <p>4.0. Essential skills</p> <ol style="list-style-type: none"> 4.1. Learning skills; 4.2. Communication skills; 4.3. Teamwork skills; 4.4. Report writing skills; 4.5. Memory skills; 	

	4.6 Problem solving; 4.7 Calculation skills.
DESCRIPTION OF END PRODUCTS/SERVICE	Nutrition matching, preparation and supply of feed in different stages are made according to the nutritional needs of livestock and poultry and the nutritional value of feed.
CIRCUMSTANTIAL KNOWLEDGE	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Defining the scope of responsibility; 2. Observing the code of good conduct; 3. Observing research ethics; 4. Following the laws, regulations and policies of the agribusiness sector.

OCCUPATION	ANIMAL BREEDING TECHNICIAN	OCCUPATION CODE	
DUTY TITLE	SATISFACTION OF NUTRITIONAL NEEDS AND FEEDING STANDARDS	DUTY NO.	606
TASK TITLE	APPLICATION OF NON-NUTRITIVE FEED ADDITIVES	TASK NO.	6063
PERFORMANCE CRITERIA	The person performing this task must be able to apply non-nutritive feed additives and use them in the farm according to their characteristics and properties.		
RANGE STATEMENT	<p>The task will be carried out in the breeding farm under the supervision of the animal breeding engineer.</p> <p>Available tools and equipment include:</p> <ol style="list-style-type: none"> 1. Computer; 2. Standard documents for livestock and poultry breeding; 3. Statistical software package; 4. Stationery; 5. Tablet PC/smart phone. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Add the growth promoter; 2. Add the insect repellent healthcare agent; 3. Add the feed preservative; 4. Add other additives. 		<p>Detailed knowledge about:</p> <p>1.0. Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1. Determine the need for non-nutritive feed additives; 1.2. Prepare feed according to the characteristics of non-nutritive feed additives; 1.3. Use non-nutritive feed additives. <p>2.0. Principle</p> <p>The person performing this task must be able to explain the following principle:</p> <ol style="list-style-type: none"> 2.1. Characteristics of non-nutritive feed additives; 2.2. Application principles of non-nutritive feed additives. <p>3.0. Theories</p> <p>The person performing this task shall be able to explain the following contents:</p> <ol style="list-style-type: none"> 3.1. Growth promoter; 3.2. Insect repellent healthcare agent; 3.3. Feed preservative; 3.4. Other additives. <p>4.0. Essential skills</p> <ol style="list-style-type: none"> 4.1. Learning skills; 4.2. Communication skills; 4.3. Teamwork skills; 4.4. Report writing skills; 4.5. Memory skills; 4.6. Problem solving. 	
DESCRIPTION	OF	END	Non-nutritive feed additives for livestock and poultry are used in

PRODUCTS/SERVICE	the farm according to their characteristics and properties as well as production needs.
CIRCUMSTANTIAL KNOWLEDGE	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Defining the scope of responsibility; 2. Observing the code of good conduct; 3. Observing research ethics; 4. Following the laws, regulations and policies of the agribusiness sector.

OCCUPATION	ANIMAL BREEDING TECHNICIAN	OCCUPATION CODE	
DUTY TITLE	BREEDING MANAGEMENT OF COMMERCIAL LIVESTOCK AND POULTRY	DUTY NO.	607
TASK TITLE	BREEDING MANAGEMENT OF DAIRY CATTLE	TASK NO.	6071
PERFORMANCE CRITERIA	The person performing this task must be able to feed and manage dairy cow using a TMR feeding machine and milking machine according to their physiological characteristics, nutritional needs, and feeding and management requirements.		
RANGE STATEMENT	<p>The task will be carried out in the breeding farm under the supervision of the animal breeding engineer.</p> <p>Available tools and equipment include:</p> <ol style="list-style-type: none"> 1. Feed for dairy cow; 2. TMR feeding machine; 3. Milking machine; 4. Epidemic prevention materials and appliances. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Feed and manage dairy cow according to their physiological characteristics and nutritional needs; 2. Guide dairy cow breeding; 3. Feed and manage calves; 4. Feed and manage mature cow; 5. Feed and manage young cow; 6. Feed and manage adult dairy cow; 7. Carry out delivery for dairy cow; 8. Wean; 9. Milk; 10. Dry off; 11. Allocate daily ration; 12. Care dairy cow; 13. Feed with TMR. 		<p>Detailed knowledge about:</p> <p>1.0. Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1. Formulate feeding and management measures according to physiological characteristics and nutritional needs of dairy cow at each stage; 1.2. Manage dairy cow during breeding season; 1.3. Collect and process milk. <p>2.0. Principle</p> <p>The person performing this task must be able to explain the following principle:</p> <ol style="list-style-type: none"> 2.1. Physiological characteristics and nutritional needs of dairy cow at each stage; 2.2. Feeding and management of dairy cow at each stage; 2.3. Lactation physiology of dairy cow; 2.4. Anatomical physiology of dairy cow; 2.5. Digestive physiology of dairy cow. <p>3.0. Theories</p> <p>The person performing this task shall be able to explain the following contents:</p> <ol style="list-style-type: none"> 3.3. Nutritional needs of dairy cow; 3.4. Milk production and process; 3.5. Breeding management of dairy cow. <p>4.0. Essential skills</p> <ol style="list-style-type: none"> 4.1. Learning skills; 4.2. Communication skills; 	

	<p>4.3. Teamwork skills;</p> <p>4.4. Report writing skills;</p> <p>4.5. Calculation skills;</p> <p>4.6. Communication skills;</p> <p>4.7. Time management.</p>
DESCRIPTION OF END PRODUCTS/SERVICE	Carry out feeding and management for dairy cow based on their physiological characteristics, nutritional needs, and feeding and management requirements.
CIRCUMSTANTIAL KNOWLEDGE	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Allocation of feed; 2. Reproduction control; 3. Marketing of agricultural products; 4. Processing of dairy foods.

OCCUPATION	ANIMAL BREEDING TECHNICIAN	OCCUPATION CODE	
DUTY TITLE	BREEDING MANAGEMENT OF COMMERCIAL LIVESTOCK AND POULTRY	DUTY NO.	607
TASK TITLE	FEEDING AND MANAGEMENT OF BEEF COW	TASK NO.	6072
PERFORMANCE CRITERIA	The person performing this task shall be able to manage beef cow according to their physiological characteristics, nutritional needs, and feeding and management requirements.		
RANGE STATEMENT	<p>The task will be carried out in the breeding farm under the supervision of the animal breeding engineer.</p> <p>Available tools and equipment include:</p> <ol style="list-style-type: none"> 1. Feed; 2. Feeding machine; 3. Epidemic prevention materials and appliances. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Feed and manage beef cow according to their physiological characteristics and nutritional needs; 2. Guide beef breeding; 3. Feed and manage calves; 4. Feed and manage finished cow; 5. Feed and manage adult lactating cows; 6. Carry out delivery for cows; 7. Handle newborns; 8. Wean; 9. Allocate daily ration; 10. Care beef cow; 11. Feed beef cow. 		<p>Detailed knowledge about:</p> <p>1.0. Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1. Formulate management measures according to physiological characteristics and nutritional needs of beef cow at each stage; 1.2. Manage cows during breeding season. <p>2.0. Principle</p> <p>The person performing this task must be able to explain the following principle:</p> <ol style="list-style-type: none"> 2.1. Physiological characteristics of beef cow at each stage; 2.2. Nutritional needs of beef cow at each stage; 2.3. Anatomical physiology of beef cow; 2.4. Digestive physiology of beef cow. <p>3.0. Theories</p> <p>The person performing this task shall be able to explain the following contents:</p> <ol style="list-style-type: none"> 3.1. Feeding and management of beef cow at each stage; 3.2. Feed and manage calves; 3.3. Feed and manage finished cow; 3.4. Feeding and management of beef breeding cows. <p>4.0. Essential skills</p> <ol style="list-style-type: none"> 4.1. Learning skills; 4.2. Communication skills; 4.3. Teamwork skills; 4.4. Report writing skills; 4.5. Calculation skills; 4.6. Communication skills; 	

	4.7. Time management.
DESCRIPTION OF END PRODUCTS/SERVICE	Carry out feeding and management for beef cow based on their physiological characteristics, nutritional needs, and feeding and management requirements.
CIRCUMSTANTIAL KNOWLEDGE	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Allocation of feed; 2. Reproduction control; 3. Storage and marketing of agricultural products; 4. Processing of meat products.

OCCUPATION	ANIMAL BREEDING TECHNICIAN	OCCUPATION CODE	
DUTY TITLE	BREEDING MANAGEMENT OF COMMERCIAL LIVESTOCK AND POULTRY	DUTY NO.	607
TASK TITLE	FEEDING AND MANAGEMENT OF CHICKENS	TASK NO.	6073
PERFORMANCE CRITERIA	The person performing this task shall be able to manage and feed layer chickens and broiler chickens according to their physiological characteristics, nutritional needs, and feeding and management requirements.		
RANGE STATEMENT	<p>The task will be carried out in the breeding farm under the supervision of the animal breeding engineer.</p> <p>Available tools and equipment include:</p> <ol style="list-style-type: none"> 1. Auto feeding machine (feed line); 2. Auto drinking machine (water line); 3. Feed; 4. Defecation cleaning line; 5. Dung cleaner; 6. Anti-epidemic vaccine. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Feed and manage layer chickens and broiler chickens according to their physiological characteristics and nutritional needs at each stage; 2. Guide chicken breeding; 3. Feed and manage broiler chickens; 4. Feed and manage layer chickens; 5. Clean chicken house; 6. Maintain auto feeding machine and other equipment; 7. Carry out epidemic prevention in chicken house. 		<p>Detailed knowledge about:</p> <p>1.0. Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1. Formulate management measures according to physiological characteristics and nutritional needs of layer chickens and broiler chickens at each stage; 1.2. Maintain equipment of various kinds on farm; 1.3. Control and regulate chicken house environment. <p>2.0. Principle</p> <p>The person performing this task must be able to explain the following principle:</p> <ol style="list-style-type: none"> 2.1. Physiological characteristics and nutritional needs of layer chickens and broiler chickens at each stage; 2.2. Anatomical physiology of chickens; 2.3. Digestive physiology of chickens. <p>3.0. Theories</p> <p>The person performing this task shall be able to explain the following contents:</p> <ol style="list-style-type: none"> 3.1. Nutritional needs of chickens; 3.2. Feeding and management of layer chickens and broiler chickens at each stage. <p>4.0. Essential skills</p> <ol style="list-style-type: none"> 4.1. Learning skills; 4.2. Communication skills; 4.3. Teamwork skills; 	

	<p>4.4. Report writing skills;</p> <p>4.5. Calculation skills;</p> <p>4.6. Communication skills;</p> <p>4.7. Time management.</p>
DESCRIPTION OF END PRODUCTS/SERVICE	Be able to manage and feed layer chickens and broiler chickens according to their physiological characteristics, nutritional needs, and feeding and management requirements.
CIRCUMSTANTIAL KNOWLEDGE	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Allocation of feed; 2. Reproduction control; 3. Storage and marketing of agricultural products; 4. Processing of meat and egg products.

OCCUPATION	ANIMAL BREEDING TECHNICIAN	OCCUPATION CODE	
DUTY TITLE	BREEDING MANAGEMENT OF COMMERCIAL LIVESTOCK AND POULTRY	DUTY NO.	607
TASK TITLE	FEEDING AND MANAGEMENT OF SHEEP	TASK NO.	6074
PERFORMANCE CRITERIA	The person performing this task shall be able to manage sheep according to their physiological characteristics, nutritional needs, and feeding and management requirements.		
RANGE STATEMENT	<p>The task will be carried out in the breeding farm under the supervision of the animal breeding engineer.</p> <p>Available tools and equipment include:</p> <ol style="list-style-type: none"> 1. Personal medical protective equipment: disposable protective clothing, masks, hoods, disposable medical gloves, etc.; 2. Feeding and management tools: computers, punching pliers, tail cutters, scalpels, hoof trimmers, shearing machines, etc.; 3. Feed; 4. Defecation cleaning line; 5. Anti-epidemic vaccine. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Follow the health and safety precautions when performing the task; 2. Select appropriate tools and equipment as required for the task; 3. Feed and manage stud ram; 4. Feed and manage ewe; 5. Feed and manage lamb; 6. Feed and manage growing ewe; 7. Fatten mutton sheep. 		<p>Detailed knowledge about:</p> <p>1.0. Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1. Design diet formula for sheep at each stage; 1.2. Train and collect semen for stud ram; 1.3. Lamb delivery; 1.4. Perform numbering, tail cutting, castrating and horn removal for lamb; 1.5. Hoof trimming; 1.6. Evaluate mutton sheep productivity. <p>2.0. Principle</p> <p>The person performing this task must be able to explain the following principle:</p> <ol style="list-style-type: none"> 2.1. Physiological characteristics of sheep at each growth stage; 2.2. Design of sheep diet formula; 2.3. Principle of mutton sheep fattening. <p>3.0. Theories</p> <p>The person performing this task shall be able to explain the following contents:</p> <ol style="list-style-type: none"> 3.1. Characteristics of daily ration for stud ram; 3.2. Calculation of reproductive rate of ewe; 3.3. Digestive physiological characteristics of lambs; 3.4. Characteristics of changes in lamb body weight. <p>4.0. Essential skills</p>	

	<ul style="list-style-type: none"> 4.1. Teamwork skills; 4.2. Report writing skills; 4.3. Calculation skills; 4.4. Communication skills; 4.5. Problem solving; 4.6. Time management.
DESCRIPTION OF END PRODUCTS/SERVICE	Be able to provide daily ration for sheep, and manage and feed them according to their physiological characteristics, nutritional needs, and feeding and management requirements.
CIRCUMSTANTIAL KNOWLEDGE	<p>Detailed knowledge about:</p> <ul style="list-style-type: none"> 1. Defining the scope of responsibility; 2. Observing the code of good conduct; 3. Observing research ethics; 4. Applicable laws, regulations and policies of the agribusiness sector.

OCCUPATION	ANIMAL BREEDING TECHNICIAN	OCCUPATION CODE	
DUTY TITLE	BREEDING MANAGEMENT OF COMMERCIAL LIVESTOCK AND POULTRY	DUTY NO.	607
TASK TITLE	FEEDING AND MANAGEMENT OF RABBITS	TASK NO.	6075
PERFORMANCE CRITERIA	The person performing this task shall be able to feed rabbits and manage their growth, development and breeding based on nutritional needs during each stage and physiological period.		
RANGE STATEMENT	<p>The task will be carried out in the breeding farm under the supervision of the animal breeding engineer.</p> <p>Available tools and equipment include:</p> <ol style="list-style-type: none"> 1. Personal medical protective equipment, such as disposable gloves, protective clothing, masks, hood and disposable medical gloves; 2. Feeding and management tools: computer, punching pliers and scalpels; 3. Feed; 4. Defecation cleaning line; 5. Anti-epidemic vaccine. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Carry out routine management of rabbits; 2. Prepare daily ration for stud male and female rabbits; 3. Control breeding frequency of male rabbits; 4. Manage pregnant and lactating female rabbits. 		<p>Detailed knowledge about:</p> <p>1.0. Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1. Feed and manage stud male rabbits; 2.1. Feed and manage female rabbits. <p>2.0. Principle</p> <p>The person performing this task must be able to explain the following principle:</p> <ol style="list-style-type: none"> 2.1. Physiological characteristics and nutritional needs of rabbits at each stage; 2.2. Physiological characteristics of rabbits; 2.3. Digestive characteristics of rabbits. <p>3.0. Theories</p> <p>The person performing this task shall be able to explain the following contents:</p> <ol style="list-style-type: none"> 3.1. Key points of feeding and management of rabbits at each stage; 3.3. Growth laws of rabbits; 3.4. Characteristics of sexual behavior of rabbits. <p>4.0. Essential skills</p> <ol style="list-style-type: none"> 4.1. Learning skills; 4.2. Communication skills; 4.3. Teamwork skills; 4.4. Report writing skills; 	

	<p>4.5. Calculation skills;</p> <p>4.6. Communication skills;</p> <p>4.7 Time management.</p>
DESCRIPTION OF END PRODUCTS/SERVICE	Be able to feed rabbits and manage their growth, development and breeding during each growth stage and physiological period based on feeding standards.
CIRCUMSTANTIAL KNOWLEDGE	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Defining the scope of responsibility; 2. Observing the code of good conduct; 3. Observing research ethics; 4. Applicable laws, regulations and policies of the agribusiness sector.

OCCUPATION	ANIMAL BREEDING TECHNICIAN	OCCUPATION CODE	
DUTY TITLE	BREEDING MANAGEMENT OF COMMERCIAL LIVESTOCK AND POULTRY	DUTY NO.	607
TASK TITLE	FEEDING AND MANAGEMENT OF PIGS	TASK NO.	6076
PERFORMANCE CRITERIA	The person performing this task shall be able to feed pigs and manage their growth, development and breeding based on nutritional needs during each stage and physiological period.		
RANGE STATEMENT	<p>The task will be carried out in the breeding farm under the supervision of the animal breeding engineer.</p> <p>Available tools and equipment include:</p> <ol style="list-style-type: none"> 1. Personal medical protective equipment, such as disposable long-sleeve gloves, protective clothing, masks, hood and disposable medical gloves; 2. Feeding and management tools: computer, punching pliers and scalpels; 3. Feed; 4. Defecation cleaning line; 5. Anti-epidemic vaccine. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Follow the health and safety precautions when performing the task; 2. Prepare feed for boars; 3. Carry out routine management for boars; 4. Analyze nutritional requirements of piglets; 5. Analyze nutritional requirements of growing-finishing pigs; 6. Analyze nutritional requirements of sows; 7. Carry out sow breeding. 		<p>Detailed knowledge about:</p> <p>1.0. Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 2.1. Breeding and management of boars; 2.2. Breeding and management of sows; 2.3. Breeding and management of piglet; 2.4. Breeding and management of finishing pigs. <p>2.0. Principle</p> <p>The person performing this task must be able to explain the following principle:</p> <ol style="list-style-type: none"> 2.1. Physiological characteristics and nutritional needs of pigs at each stage; 2.2. Feeding and management measures for pigs at each growth stage. <p>3.0. Theories</p> <p>The person performing this task shall be able to explain the following contents:</p> <ol style="list-style-type: none"> 3.1 Physiological characteristics of boars, sows, piglets and finishing pigs; 3.2 Characteristics of body weight change in pigs. <p>4.0. Essential skills</p> <ol style="list-style-type: none"> 4.1. Learning skills; 4.2. Communication skills; 4.3. Teamwork skills; 4.4. Report writing skills; 	

	<p>4.5. Calculation skills;</p> <p>4.6. Communication skills;</p> <p>4.7 Time management.</p>
DESCRIPTION OF END PRODUCTS/SERVICE	Be able to feed pigs and manage their growth, development and breeding during each growth stage and physiological period based on feeding standards.
CIRCUMSTANTIAL KNOWLEDGE	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Defining the scope of responsibility; 2. Observing the code of good conduct; 3. Observing research ethics; 4. Applicable laws, regulations and policies of the agribusiness sector.

OCCUPATION	ANIMAL BREEDING TECHNICIAN	OCCUPATION CODE	
DUTY TITLE	EPIDEMIC PREVENTION MEASURES IN BREEDING FARMS	DUTY NO.	608
TASK TITLE	KILL MOSQUITOES, FLIES AND MICE	TASK NO.	6081
PERFORMANCE CRITERIA	The person performing this task shall be able to carry out various physical, chemical and biological prevention and control of mosquitoes and flies in the farm according to relevant standards and requirements on epidemic prevention and pest control, so as to ensure that the control of mosquitoes, flies and rats in the farm meets the safety indicators for breeding.		
RANGE STATEMENT	<p>The task will be carried out in the breeding farm under the supervision of the animal breeding engineer.</p> <p>Available tools and equipment include:</p> <ol style="list-style-type: none"> 1. Personal medical protective equipment, such as disposable long-sleeve gloves, protective clothing, masks, hood and disposable medical gloves; 2. Flypaper; 3. sprayer; 4. Fly/mosquito killing lamp; 5. Mosquitocide/muscicide. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Follow the health and safety precautions when performing the task; 2. Select appropriate tools and equipment as required for the task; 3. Keep the farm's internal and external environment clean; 5. Repel and kill flies and mosquitoes with various mosquitocide and muscicide; 6. Repel and kill flies and mosquitoes with correct method based on environment. 		<p>Detailed knowledge about:</p> <p>1.0. Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1 Repel and kill flies and mosquitoes with physical methods; 1.2 Repel and kill flies and mosquitoes with biological methods; 1.3 Repel and kill flies and mosquitoes with chemical methods. <p>2.0. Principle</p> <p>The person performing this task must be able to explain the following principle:</p> <ol style="list-style-type: none"> 2.1 Working mechanism of fly-killer lamp; 2.2 Working mechanism of mosquito-/fly-killing chemicals. <p>3.0. Theories</p> <p>The person performing this task shall be able to explain the following contents:</p> <ol style="list-style-type: none"> 3.1 Application of biological methods to repel and kill flies and mosquitoes; 3.2 Application of physical methods to repel and kill flies and mosquitoes; 3.3 Application of chemical methods to repel and kill flies and mosquitoes; 3.4 Precautions for application of the methods. <p>4.0. Essential skills</p> <ol style="list-style-type: none"> 4.1. Learning skills; 4.2. Communication skills; 4.3. Teamwork skills; 	

	<p>4.4. Communication skills;</p> <p>4.5. Problem solving;</p> <p>4.6. Time management.</p>
DESCRIPTION OF END PRODUCTS/SERVICE	<p>Be able to carry out various physical, chemical and biological prevention and control of mosquitoes and flies in the farm according to relevant standards and requirements on epidemic prevention and pest control, so as to ensure that the control of mosquitoes, flies and rats in the farm meets the safety indicators for breeding.</p>
CIRCUMSTANTIAL KNOWLEDGE	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Defining the scope of responsibility; 2. Observing the code of good conduct; 3. Observing research ethics; 4. Applicable laws, regulations and policies of the agribusiness sector.

OCCUPATION	ANIMAL BREEDING TECHNICIAN	OCCUPATION CODE	
DUTY TITLE	EPIDEMIC PREVENTION MEASURES IN BREEDING FARMS	DUTY NO.	608
TASK TITLE	ROUTINE VACCINATION	TASK NO.	6082
PERFORMANCE CRITERIA	The person performing this task must be able to carry out routine vaccination and prevention tasks on farms in a timely manner according to standards and requirements on immunization of farm livestock, so as to ensure their healthy growth and development.		
RANGE STATEMENT	<p>The task will be carried out in the breeding farm under the supervision of the animal breeding engineer.</p> <p>Available tools and equipment include:</p> <ol style="list-style-type: none"> 1. Personal medical protective equipment, such as disposable long-sleeve gloves, protective clothing, masks, hood and disposable medical gloves. 2. 5 ml syringe; 3. Tweezers; 4. Hairclipper; 5. Thermometer; 6. Cotton wool; 7. Registration card; 8. Disinfectant; 9. Inoculating needle; 10. Spray gun; 11. Stethoscope; 12. Contaminant tub; 13. Refrigerator; 14. Biological products. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Follow the health and safety precautions when performing the task; 2. Select appropriate tools and equipment as required for the task; 3. Preserve biological products; 4. Inspect and transport biological products; 5. Dilute and inoculate biological products. 		<p>Detailed knowledge about:</p> <p>1.0. Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1. Subcutaneous injection; 1.2. Intradermic injection; 1.3. Intramuscular inoculation; 1.4. Nasal drip inoculation; 1.5. Oral inoculation; 1.6. Aerosol inoculation; 1.7. Scratch inoculation; 1.8. Eye dropping inoculation. <p>2.0. Principle</p> <p>The person performing this task must be able to explain the following principle:</p> <ol style="list-style-type: none"> 2.1. Precautions for vaccination; 2.2. Causes of vaccination failure. <p>3.0. Theories</p> <p>The person performing this task shall be able to explain the</p>	

	<p>following contents:</p> <p>3.1. Application of subcutaneous, intradermic, intramuscular, oral, aerosol, scratch, nasal and eye dropping inoculation methods;</p> <p>3.2. Selection and procedures of inoculation.</p> <p>4.0. Essential skills</p> <p>4.1. Learning skills;</p> <p>4.2. Communication skills;</p> <p>4.3. Teamwork skills;</p> <p>4.4. Report writing skills;</p> <p>4.5. Calculation skills;</p> <p>4.6. Communication skills;</p> <p>4.7 Time management.</p>
DESCRIPTION OF END PRODUCTS/SERVICE	Carry out routine vaccination and prevention tasks on farms in a timely manner according to standards and requirements on immunization of farm livestock, so as to ensure their healthy growth and development.
CIRCUMSTANTIAL KNOWLEDGE	<ol style="list-style-type: none"> 1. Defining the scope of responsibility; 2. Observing the code of good conduct; 3. Observing research ethics; 4. Applicable laws, regulations and policies of the agribusiness sector.

OCCUPATION	ANIMAL BREEDING TECHNICIAN	OCCUPATION CODE	
DUTY TITLE	BASIC MANAGEMENT OF BREEDING FARMS	DUTY NO.	609
TASK TITLE	HUMAN RESOURCE MANAGEMENT OF FARM	TASK NO.	6091
PERFORMANCE CRITERIA	The person performing this task must be able to carry out recruitment, education, training, promotion, career planning and management for farm human resources according to the farm's development planning, breeding scale, operation and management as well as requirements on human resource management.		
RANGE STATEMENT	<p>The task will be carried out in the breeding farm under the supervision of the animal breeding engineer.</p> <p>Available tools and equipment include:</p> <ol style="list-style-type: none"> 1. Computer; 2. Service contract document; 3. Salary management practice handbook. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Carry out personnel recruitment and selection; 2. Education and training for employees; 3. Establishment of employees' wage system; 4. Staff motivation; 5. Labor management; 6. Improve labor productivity in animal husbandry. 		<p>Detailed knowledge about:</p> <p>1.0. Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1. Follow the recruitment and selection procedures; 1.2. Train employees; 1.3. Manage the labor of employees. <p>2.0. Principle</p> <p>The person performing this task must be able to explain the following principle:</p> <ol style="list-style-type: none"> 2.1. The role of human resources in the production and operation of animal husbandry; 2.2. Principles of personnel recruitment and selection; 2.3. Principle of employee incentive; 2.4. Incentive principle. <p>3.0. Theories</p> <p>The person performing this task shall be able to explain the following contents:</p> <ol style="list-style-type: none"> 3.1. Labour management system; 3.2. Salary system; 3.3. Incentive system. <p>4.0. Essential skills</p> <ol style="list-style-type: none"> 4.1 Communication skills; 4.2 Teamwork skills; 4.3 Management skills. 	
DESCRIPTION OF END PRODUCTS/SERVICE	Be able to carry out recruitment, education, training, promotion, career planning and management of farm human resources according to the farm's development planning and requirements on human		

	resource management.
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: <ol style="list-style-type: none">1. Accounting of animal husbandry costs;2. Accounting of animal husbandry reports;3. Enterprise management strategy.

OCCUPATION	ANIMAL BREEDING TECHNICIAN	OCCUPATION CODE	
DUTY TITLE	BASIC MANAGEMENT OF BREEDING FARMS	DUTY NO.	609
TASK TITLE	MATERIAL MANAGEMENT OF BREEDING FARMS	TASK NO.	6092
PERFORMANCE CRITERIA	The person performing this task must be able to carry out manage farm materials according to the farm's development planning, breeding scale, operation and management as well as requirements on material management.		
RANGE STATEMENT	<p>The task will be carried out in the breeding farm under the supervision of the animal breeding engineer.</p> <p>Available tools and equipment include:</p> <ol style="list-style-type: none"> 1. Computer; 2. Warehouse; 3. Storage bin; 4. Feed; 5. Stockbreeding machine; 6. Warehouse-in/out order; 7. Equipment maintenance and repair record book. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Material classification; 2. Material warehouse-in; 3. Material warehouse-out; 4. Material usage; 5. Material rationing; 6. Maintenance and repair of mechanical equipment. 		<p>Detailed knowledge about:</p> <p>1.0. Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1. Carry out feed management; 1.2. Manage animal husbandry machinery and equipment; 1.3. Conduct quality control of animal products. <p>2.0. Principle</p> <p>The person performing this task must be able to explain the following principle:</p> <ol style="list-style-type: none"> 2.1. Quality control of livestock and poultry breeds; 2.2. The role of machinery and equipment in animal husbandry production. <p>3.0. Theories</p> <p>The person performing this task shall be able to explain the following contents:</p> <ol style="list-style-type: none"> 3.1. Economic limits for the use of machinery and equipment in animal husbandry; 3.2. Material management method; 3.3. Quality management method. <p>4.0. Essential skills</p> <ol style="list-style-type: none"> 4.1. Learning skills; 4.2. Communication skills; 4.3. Teamwork skills; 	

	<p>4.4. Calculation skills;</p> <p>4.5. Communication skills;</p> <p>4.6. Time management.</p>
DESCRIPTION OF END PRODUCTS/SERVICE	Manage farm materials according to the farm's development planning and the development and management requirements on breeding scale.
CIRCUMSTANTIAL KNOWLEDGE	<p>Detailed knowledge about:</p> <ol style="list-style-type: none"> 1. Breeding economic accounting; 2. Husbandry financial accounting; 3. Use of equipment and devices; 4. Enterprise management strategy.

OCCUPATION	ANIMAL BREEDING TECHNICIAN	OCCUPATION CODE	
DUTY TITLE	BASIC MANAGEMENT OF BREEDING FARMS	DUTY NO.	609
TASK TITLE	FARM FINANCIAL MANAGEMENT	TASK NO.	6093
PERFORMANCE CRITERIA	The person performing this task must be able to carry out financial management for the farm according to the farm's development planning, breeding scale, operation and management as well as requirements on financial management.		
RANGE STATEMENT	<p>This task shall be performed in the breeding farm under the supervision of the animal breeding engineers or accounting engineer senior technicians.</p> <p>Available tools and equipment include:</p> <ol style="list-style-type: none"> 1. Computer; 2. Financial management software; 3. Cash book; 4. Detailed account payments; 5. Detailed account revenue; 6. Warehouse-in/out order; 7. Reimbursement bill; 8. Details of other income and expenditures. 		
EVIDENCE REQUIREMENT			
PRACTICAL PERFORMANCE		UNDERPINNING KNOWLEDGE	
<p>The person performing this task must be able to do the following:</p> <ol style="list-style-type: none"> 1. Use, raise, recover and allocate funds; 2. Account costs of livestock products; 3. Account profits of animal husbandry; 4. Analyze economic activities in animal husbandry; 5. Assess economic benefit in animal husbandry. 		<p>Detailed knowledge about:</p> <p>1.0. Methods</p> <p>The person performing this task must be able to explain how to:</p> <ol style="list-style-type: none"> 1.1. Use, raise, recover and allocate funds; 1.2. Make cost accounting; 1.3. Make profit accounting. <p>2.0. Principle</p> <p>The person performing this task must be able to explain the following principle:</p> <ol style="list-style-type: none"> 2.1. Principles of economic activity analysis in animal husbandry; 2.2. Indicators of economic effect evaluation for animal husbandry technologies. <p>3.0. Theories</p> <p>The person performing this task shall be able to explain the following contents:</p> <ol style="list-style-type: none"> 3.1. Calculation of economic effect of animal husbandry technologies; 3.2. Calculation of costs and profits. <p>4.0. Essential skills</p> <ol style="list-style-type: none"> 4.1. Learning skills; 4.2. Communication skills; 4.3. Teamwork skills; 4.4. (Financial) statement reading skills; 4.5. Calculation skills; 	

	4.6. Communication skills; 4.7 Time management.
DESCRIPTION OF END PRODUCTS/SERVICE	Carry out financial management for the farm according to the farm's development planning, breeding scale, operation and management as well as requirements on financial management.
CIRCUMSTANTIAL KNOWLEDGE	Detailed knowledge about: 1. Human resource of farm; 2. Material resource of livestock farm; 3. Use of equipment and devices; 4. Enterprise management strategy.

TABLE 1: DACUM CHARTS FOR ANIMAL BREEDING TECHNICIANS- NTA 6

DUTY TITLE	TASK TITLE	STIMULATIVE
1.0. Animal estrus control.	1.1. Cow/sheep estrus control.	<p>General skills and knowledge</p> <ul style="list-style-type: none"> • Personal protection; • Effects of reproductive hormones on animals; • The principle of estrus induction; • Estrus synchronization; • Control of estrus in animals; • Reproductive cycle of animals; • Sign of estrus in animals; • Preparation of drugs; • Administration of drugs. <p>Tools and Equipment</p> <ul style="list-style-type: none"> • Disposable long-sleeve gloves; • Medical rubber gloves; • Protection cloth; • Mouth mask; • Cap; • Rubber boots; • Long tweezers; • Vaginal retractor; • Sponge suppository placer; • CIDR suppository placer; • Syringe. <p>Materials</p> <ul style="list-style-type: none"> • Hormone drugs: GnRH, FSH, LH, PG, PMSG and P4 (sponge suppository or CIDR suppository) • Other drugs: Iodine tincture, alcohol, potassium permanganate and cotton ball. <p>Requirements for employees</p> <ul style="list-style-type: none"> • Time management; • Work hard; • Keep promise; • Have good morals; • Have good faith; • Self-motivated.

DUTY TITLE	TASK TITLE	STIMULATIVE
2.0. Pregnancy diagnosis of livestock and poultry.	2.1. Pregnancy diagnosis of cows and sheep. 2.2. Rabbit pregnancy diagnosis. 2.3. Pig pregnancy diagnosis.	<p>General skills and knowledge</p> <ul style="list-style-type: none"> • Personal protection; • Pregnancy diagnosis by inspection, palpation and auscultation; • Pregnancy diagnosis by rectal palpation; • Pregnancy check with B-ultrasound diagnostic system; • Pregnancy diagnosis with cervical mucus and urine in laboratory; • Physiological characteristics of livestock and poultry pregnancy; • Working principle of B-ultrasound diagnostic system; • Sanitary safety and health. <p>Tools and Equipment</p> <ul style="list-style-type: none"> • Disposable long-sleeve gloves; • Medical rubber gloves; • Protection cloth; • Mouth mask; • Cap; • Rubber boots; • Long tweezers; • Stethoscope; • Disinfected clean towel; • Holding frame; • B-ultrasound diagnostic system; • Scissors; • Test tube. <p>Materials</p> <ul style="list-style-type: none"> • Coupling agent; • Iodine and alcohol; • Iodine tincture; • Lubricant. <p>Requirements for employees</p> <ul style="list-style-type: none"> • Time management; • Work hard; • Keep promise; • Have good morals; • Have good faith; • Self-motivated.

DUTY TITLE	TASK TITLE	STIMULATIVE
3.0. Domestic animal delivery.	3.1. Delivery of cow and sheep. 3.2. Delivery of rabbit. 3.3. Delivery of pig. 3.4. Care of newborn and suckling animals.	<p>General skills and knowledge</p> <ul style="list-style-type: none"> • Personal protection; • Sanitary safety and health; • Environmental disinfection; • Skin and mucous membrane disinfection; • Use of oxytocin; • Signs of livestock parturition; • Calculation of livestock delivery date; • Delivery measures during parturition; • Emergency treatment to various delivery conditions; • Postnatal monitoring and health care of livestock; • Feed of suckling animals; • Weaning; • First aid to newborn animals. <p>Tools and Equipment</p> <ul style="list-style-type: none"> • Disposable long-sleeve gloves; • Medical rubber gloves; • Protection cloth; • Mouth mask; • Cap; • Rubber boots; • Long tweezers; • Stethoscope; • Disinfected clean towel; • Sprayer; • Milk pot; • Warming apparatus: heat lamp, thermal umbrella, and electric blanket. <p>Materials</p> <ul style="list-style-type: none"> • Sodium hydroxide, carbonic acid or plant ash; • Iodine; • Lysol or bromo-geramine or potassium permanganate; • Oxytocin. <p>Requirements for employees</p> <ul style="list-style-type: none"> • Time management; • Work hard; • Keep promise; • Have good morals; • Have good faith; • Self-motivated.

DUTY TITLE	TASK TITLE	STIMULATIVE
4.0. Egg hatching.	4.1. Management of breeding eggs. 4.2. Egg hatching management. 4.3. Handling of newborn chicks.	<p>General skills and knowledge</p> <ul style="list-style-type: none"> • Personal protection; • Sanitary safety and health; • Selection of hatching eggs; • Disinfection of breeding eggs; • Preservation of breeding eggs; • Inspection of breeding eggs with an egg candler; • Egg hatching; • Hatching processes; • Developmental characteristics of embryo; • Sex identification for chicks; • Beak cutting and vaccination of chicks. <p>Tools and Equipment</p> <ul style="list-style-type: none"> • Disposable long-sleeve gloves; • Medical rubber gloves; • Protection cloth; • Mouth mask; • Cap; • Rubber boots; • Long tweezers; • Incubator; • Egg rack cart; • Egg tray; • Hatcher; • Hatcher tray; • Egg candling equipment; • Chick picking equipment; • Chick sex identification equipment; • Infrared beak cutter. <p>Materials</p> <ul style="list-style-type: none"> • Formalin; • Potassium permanganate. <p>Requirements for employees</p> <ul style="list-style-type: none"> • Time management; • Work hard; • Keep promise; • Have good morals; • Have good faith; • Self-motivated.

DUTY TITLE	TASK TITLE	STIMULATIVE
5.0. Livestock and poultry breeding management.	5.1. Cattle breeding management. 5.2. Chicken breeding management. 5.3. Sheep breeding management. 5.4. Pig breeding management. .	<p>General skills and knowledge</p> <ul style="list-style-type: none"> • Reproductive knowledge; • Breeding knowledge; • Pregnancy diagnosis skills; • Delivery skills and delivery assistance; • Hatching skills; • Breeding management knowledge; • Creativity and innovation skills; • Problem-solving ability; • Communication skills; • Computer skills; • Safety skills; • Pregnancy diagnosis with ultrasound B. <p>Tools and Equipment</p> <ul style="list-style-type: none"> • Printer; • Computer; • B-ultrasound; • Estrus monitoring system; • Common equipment and tools for reproduction; • Vaginal retractor; • Surgical instruments; • Syringe. <p>Materials</p> <ul style="list-style-type: none"> • Medical protective equipment; • Reproductive drugs and tools; • Breeding materials; • Livestock and poultry; • Reproductive control hormone: GnRH, FSH, LH, PG, PMSG and HCG; • Antibiotics; • Physiological saline; • Potassium permanganate. <p>Requirements for employees</p> <ul style="list-style-type: none"> • Time management; • Work hard; • Keep promise; • Have good morals; • Reliable; • Self-motivated.

DUTY TITLE	TASK TITLE	STIMULATIVE
6.0. Satisfaction of nutritional needs and feeding standards.	6.1. Analysis of nutritional needs. 6.2. Calculation of nutrition in feed. 6.3. Application of non-nutritive feed additives.	<p>General skills and knowledge</p> <ul style="list-style-type: none"> • Identification of animal nutritional needs; • Identification of nutritional needs for maintenance; • Identification of nutrition for animals in breeding period; • Standards for livestock and poultry breeding; • Identification of feed ingredients; • Calculation of effective energy value in feed; • Effects of amino acid, minerals and vitamins on animals; • Use of roughage and concentrated feed; • Application of growth stimulator; • Application of insect repellent healthcare agent; • Application of feed preservative. <p>Tools and Equipment</p> <ul style="list-style-type: none"> • Computer; • Statistical package; • Stationery; • Tablet PC/Smart phone. <p>Materials</p> <ul style="list-style-type: none"> • Feed; • Feed additives; • Growth stimulator; • Insect repellent healthcare agent; • Feed preservative. <p>Requirements for employees</p> <ul style="list-style-type: none"> • Time management; • Work hard; • Keep promise; • Have good morals; • Have good faith; • Self-motivated.

DUTY TITLE	TASK TITLE	STIMULATIVE
7.0. Breeding management of commercial livestock and poultry.	7.1. Breeding management of dairy cattle. 7.2. Feeding and management of beef cow. 7.3. Feeding and management of chickens. 7.4. Feeding and management of sheep. 7.5. Feeding and management of rabbits. 7.6. Feeding and management of pigs.	<p>General skills and knowledge</p> <ul style="list-style-type: none"> • Nutritional needs and feeding standards; • Knowledge of epidemic prevention; • Commercial farm breeding knowledge; • Knowledge of breeding farm basic management; • Feeding and management of dairy cow; • Milk collection and process; • Requirements and regulation of chicken house environment; • Hoof trimming, castrating, tail cutting, horn removal and beak cutting. <p>Tools and Equipment</p> <ul style="list-style-type: none"> • Breeding standard; • Epidemic prevention supplies and equipment; • Farm management infrastructure; • Computer; • TMR feeding machine; • Milking machine; • Feeding machine; • Defecation cleaning machine; • Auto feeding machine; • Auto drinking machine; • Feeding and management tools: computers, punching pliers, tail cutters, scalpels, hoof trimmers, shearing machines, etc. <p>Materials</p> <ul style="list-style-type: none"> • Feed; • Anti-epidemic vaccine. <p>Requirements for employees</p> <ul style="list-style-type: none"> • Curiosity; • Responsibility; • Economic benefits; • Social benefits; • Time management; • Have good faith.

DUTY TITLE	TASK TITLE	STIMULATIVE
8.0. Epidemic prevention measures in breeding farms.	8.1. Kill mosquitoes, flies and mice. 8.2. Routine vaccination.	<p>General skills and knowledge</p> <ul style="list-style-type: none"> • Knowledge of epidemic prevention and subcutaneous injection; • Application of intradermic injection; • Application of intramuscular inoculation; • Application of nasal drip inoculation; • Application of oral inoculation; • Application of aerosol inoculation; • Application of scratch inoculation; • Application of eye dropping inoculation. <p>Tools and Equipment</p> <ul style="list-style-type: none"> • Personal protection supplies; • Flypaper; • Sprayer; • Fly/mosquito killing lamp; • Syringe. • Tweezers; • Hairclipper; • Thermometer; • Registration card; • Inoculating needle; • Spray gun; • Stethoscope; • Contaminant tub; • Refrigerator. <p>Materials</p> <ul style="list-style-type: none"> • Fly/mosquito killing lamp; • Mosquitocide/muscicide; • Detergent; • Cotton wool. <p>Requirements for employees</p> <ul style="list-style-type: none"> • Time management; • Work hard; • Keep promise; • Have good morals; • Have good faith; • Safety and health awareness.

DUTY TITLE	TASK TITLE	STIMULATIVE
9.0. Basic management of breeding farms.	9.1. Human resource management of farm. 9.2. Material management of breeding farms. 9.3. Farm financial management.	<p>General skills and knowledge</p> <ul style="list-style-type: none"> • Procedures and requirements for recruitment; • Enterprise personnel training; • Application of employee management and incentive system; • Material management of breeding farms; • Management of mechanical equipment maintenance and operation; • Livestock and poultry quality control; • Feed quality control; • Financial management; • Cost and profit accounting; • Use and allocation of funds. <p>Tools and Equipment</p> <ul style="list-style-type: none"> • Personal protection supplies; • Computer; • Service contract documents; • Farm management regulations documents; • Feed; • Stockbreeding machines; • Warehouse in/out order; • Financial account. <p>Materials</p> <ul style="list-style-type: none"> • Paper; • Pen. <p>Requirements for employees</p> <ul style="list-style-type: none"> • Time management; • Work hard; • Keep promise; • Have good morals; • Have good faith; • Communication and team work; • Time management.