

## CARRY OUT PIG PRODUCTION

**UNIT CODE:** 0811 351 06A

**TVET CDACC UNIT CODE:** AGR/OS/AP/CR/07/4/MA

### UNIT DESCRIPTION

This unit describes competencies required to carry out pig production. It involves feeding pigs, carrying out breeding, carrying out piglet rearing, performing routine management practices and performing pig slaughter.

### ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
These describe the key outcomes which make up workplace functions	These are assessable statements which specify the required level of performance for each of the elements <i>(Bold and italicized terms are elaborated in the range)</i>
1. Construct pig structures	1.1 <b>Tools, equipment and materials</b> are assembled as per work requirements 1.2 Site for pig structures is selected based on LPM 1.3 Pig structures are designed according to Livestock Production Manual (LPM) 1.4 Pig structures are constructed based on livestock production manual 1.5 <b>Piggery equipment</b> are installed as per LPM 1.6 Pig structures are maintained as per workplace procedures 1.7 Pig structures construction and maintenance records are kept as per workplace requirements 1.8 Waste is managed according to environmental protection regulations
2. Carry out pig feeding	2.1 Tools, equipment and materials are assembled as per work requirements 2.2 Pig feeds are provided to pigs as per age groups.

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	<p>2.3 Basal rations at various physiological stages are provided based on feeding plan</p> <p>2.4 <b>Feed supplements</b> are offered according to animal dietary requirements</p> <p>2.5 Feed intake is evaluated as per the LPM</p> <p>2.6 Feed conversion efficiency is evaluated based on productivity</p> <p>2.7 Pig feeds records are kept as per the workplace procedures</p> <p>2.8 Waste is managed according to environmental protection regulations</p>
3. Carry out pig breeding	<p>3.1 <b>Breeding management tools</b>, equipment and materials are assembled in accordance with LPM</p> <p>3.2 <b>Pig breeds</b> are identified based on LPM</p> <p>3.3 Pig breeds are selected based on traits of economic importance and farmer requirements</p> <p>3.4 Pigs on heat are detected based on LPM</p> <p>3.5 Flushing is carried out as per LPM</p> <p>3.6 Service is performed based on the <b>breeding method and technologies</b> as per the LPM</p> <p>3.7 Pregnant pigs are provided care based on the LPM</p> <p>3.8 Steaming-up is carried out based on LPM</p> <p>3.9 Farrowing is managed as per the LPM</p> <p>3.10 Breeding records are prepared as per work procedures</p>
4. Carry out piglet rearing	<p>4.1 Tools, equipment and materials are assembled as per work requirements</p> <p>4.2 <b>Nutritional Management</b> is applied on suckling sow and piglets according to their developmental stage and LPM</p> <p>4.3 <b>Environmental conditions</b> in the piglet pens is maintained in accordance to LPM</p>

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	<p>4.4 Health monitoring and management is performed based on the LPM</p> <p>4.5 Piglets are handled in accordance to the LPM</p> <p>4.6 Artificial colostrum is prepared as per pig husbandry manual</p> <p>4.7 Piglets are weighed as per LPM</p> <p>4.8 Vaccination is performed as per LPM</p> <p>4.9 <b>Iron supplementation</b> is carried out as per the workplace procedures and the LPM</p> <p>4.10 Teeth clipping is carried out as per the LPM</p> <p>4.11 Castration is performed as the Standard Operating Procedures (SOPs) and Livestock welfare Act</p> <p>4.12 Docking is performed as per Livestock welfare Act</p> <p>4.13 <b>Weaning Management</b> is conducted in accordance to the LPM</p> <p>4.14 Internal and external parasites are controlled as per the LPM</p> <p>4.15 Records are maintained in accordance to the workplace</p> <p>4.16 Waste is managed and disposed based on environmental protection regulations</p>
5. Perform pig routine management practices	<p>5.1 <b>Pig identification method</b> is selected based on GAPs</p> <p>5.2 Grooming is performed as per workplace requirements</p> <p>5.3 Hygiene and sanitation are performed as per pig husbandry manual (LPM)</p> <p>5.4 Culling is performed based on workplace policy</p> <p>5.5 Internal and external parasites are controlled based on LPM and GAPs</p> <p>5.6 Vaccination is performed as per workplace policy, manufacturer's instructions and LPM</p>

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	<p>5.7 Isolation and quarantine are carried out to control notifiable diseases based on GAPs</p> <p>5.8 Pigs are provided with clean water ad-libitum as per LPM</p> <p>5.9 Records are prepared as per work procedures</p> <p>5.10 <b><i>Pig farm bio-security practices</i></b> are carried out based on good animal husbandry management guidelines, animal welfare practices, workplace instructions and legal requirement as per standard operating procedures.</p>
6. Perform pig slaughter	<p>6.1 Tools, equipment and materials for slaughter are assembled based on the Meat Control Act</p> <p>6.2 Slaughter house/slab is prepared in accordance to the Kenya Meat Control Act</p> <p><b>6.3</b> Pre-slaughter handling of pig is carried out as per the Animal Welfare Act</p> <p>6.4 Humane slaughter of pig is performed as per Animal Welfare Act</p> <p>6.5 Dressing of carcass is carried out in accordance with Meat Control Act</p> <p>6.6 Cleaning of the offal is performed as per the workplace procedures</p> <p>6.7 Dressed meat is preserved as per the Meat Control Act</p> <p>6.8 Dressed meat is transported as per the Meat Control Act</p> <p>6.9 <b><i>Food safety and hygiene</i></b> measures are implemented based on legal and statutory requirements (to be inserted where there is food).</p> <p>6.10 <b><i>By-products</i></b> are handled according to the Meat Control Act</p> <p>6.11 <b><i>Condemned materials</i></b> and wastes are disposed as per the</p>

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	Meat Control Act  6.12 Cleaning of slaughterhouse and equipment is performed as per Meat Control Act and environmental management regulations  6.13 Slaughter structures are maintained as per Meat Control Act  6.14 Records are kept based on the workplace record management guidelines
7. Process pig products and by-products	7.1 <b>Data collection tools</b> for conducting market survey are obtained based on data to be collected.  7.2 Market survey is conducted to establish preference for pig products and by products in accordance to workplace policy.  7.3 Survey report is prepared and recommendations given based on findings.  7.4 <b>Pig products</b> identified based on market survey report.  7.5 Necessary <b>permits and certifications</b> are obtained based legal and statutory requirements  7.6 Tools, equipment and materials for slaughter are assembled based on the Meat Control Act  7.7 Production schedules are developed based on plant capacity and market demand.  7.8 <b>PPEs</b> are identified and worn based on job requirements.  7.9 Carcasses for processing are identified and selected based on standard operating procedures  7.10 <b>Pig products</b> are processed based on recipe and processing chart, in accordance with standard operating procedures.  7.11 Mechanisms to assure food safety and hygiene are implemented based on legal and statutory requirements.

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	<p>7.12 Pig products are packaged and stored based on type and product requirements</p> <p>7.13 Report on pig products and by-products marketing is prepared and documented as per workplace policy.</p> <p>7.14 Wastes are managed based on environmental regulations and workplace requirements</p>
8. Market pig products	<p>8.1 Market survey conducted for pig products and by-products as per workplace procedures</p> <p>8.2 Marketing channels are identified based on market segmentation.</p> <p>8.3 Marketing strategy is developed and implemented based on market needs.</p> <p>8.4 Products' competitive advantage is identified and promotion carried out based on market demand.</p> <p>8.5 Product price is set based on cost of production, profit margins, organization objectives and competitor pricing.</p> <p>8.6 Products outlets are selected based on identified channels.</p> <p>8.7 <b>Contractual agreements</b> are undertaken, signed off and managed based on agreed terms.</p> <p>8.8 Marketing strategy is reviewed based on performance.</p> <p>8.9 Report on pig products marketing and sales activities is prepared and documented as per workplace policy.</p>

## RANGE

This section provides work environment and conditions to which the performance criteria apply. It allows for different work environment and situations that will affect performance.

VARIABLE	RANGE
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1. Tools and equipment may include but are not limited to:	<ul style="list-style-type: none"> <li>• Pangas</li> <li>• Slashers</li> <li>• Measuring tape</li> <li>• Hoes</li> <li>• Axe</li> <li>• Saw</li> <li>• Spade</li> <li>• Wheelbarrow</li> </ul>
2. <i>PPE</i> may include but are not limited to:	<ul style="list-style-type: none"> <li>• Equipment and apparel used for safety of the worker e.g. <ul style="list-style-type: none"> <li>○ Gum boots, Overall, Goggles,</li> <li>○ Helmet, Nose masks, Gloves</li> </ul> </li> </ul>
3. Pig Breeds may include but are not limited to:	<ul style="list-style-type: none"> <li>• Large white</li> <li>• Landrace</li> <li>• Duroc jersey</li> <li>• Berkshire</li> </ul>
4. Piggery equipment may include but are not limited to:	<ul style="list-style-type: none"> <li>• Drinkers</li> <li>• Feeding trough</li> <li>• Surgical blades</li> </ul>
5. Pig identification method may include but are not limited to:	<ul style="list-style-type: none"> <li>• Ear tags</li> <li>• Ear notching</li> <li>• Neck chains</li> <li>• Straps with numbers</li> </ul>
6. Legal requirements may include but are not limited to:	<ul style="list-style-type: none"> <li>• Public health Act Cap 242</li> <li>• EMCA 1999</li> <li>• NEMA regulations</li> <li>• Meat control Act Cap 365</li> <li>• OSH Act 2007</li> <li>• Factories Act 514</li> </ul>

<b>VARIABLE</b>	<b>RANGE</b>
7. Permits and certifications may include but are not limited to:	<ul style="list-style-type: none"> <li>• Movement permits</li> <li>• No objection permits</li> <li>• Meat inspection permits</li> <li>• Food and hygiene certificate</li> <li>• Meat transportation permit</li> </ul>
8. Weaning Management may include but are not limited to:	<ul style="list-style-type: none"> <li>• Weaning weight estimation</li> <li>• Creep feeding</li> <li>• Water access</li> <li>• Vaccination</li> <li>• Deworming</li> <li>• Housing</li> <li>• Feeding management</li> <li>• Health monitoring</li> <li>• Sow management</li> <li>• Record keeping</li> </ul>
9. Iron Supplementation includes but not limited;	<ul style="list-style-type: none"> <li>• Iron injection</li> <li>• Sterilized soil</li> <li>• Iron sulphate paste</li> </ul>
10. Feedsupplementsmay include but are not limited to:	<ul style="list-style-type: none"> <li>• Wheat bran</li> <li>• Creep feed</li> <li>• Mineral licks</li> <li>• Feed additives</li> </ul>
11. Environmental conditions may include but are not limited to:	<ul style="list-style-type: none"> <li>• Temperature</li> <li>• Cleanliness</li> <li>• Humidity</li> <li>• Light</li> </ul>
12. Health monitoring and management may include but are not limited to:	<ul style="list-style-type: none"> <li>• Vaccination</li> <li>• Temperature checks</li> </ul>
13. Pig farm bio-security practicesmay	<ul style="list-style-type: none"> <li>• Foot bath</li> </ul>



<b>VARIABLE</b>	<b>RANGE</b>
include but are not limited to:	<ul style="list-style-type: none"> <li>• Quarantine</li> <li>• Pen disinfection</li> <li>• Equipment sterilization</li> <li>• Fencing</li> </ul>
14. Breeding method and technologies may include but are not limited to:	<ul style="list-style-type: none"> <li>• A.1</li> <li>• Synchronization</li> <li>• Cross breeding</li> <li>• Pure breeding</li> <li>• Inbreeding</li> </ul>
15. Breeding management tools may include but are not limited to:	<ul style="list-style-type: none"> <li>• Heat detection devices</li> <li>• Insemination guns</li> </ul>
16. Nutritional Management may include but are not limited to:	<ul style="list-style-type: none"> <li>• Flushing</li> <li>• Steaming up</li> <li>• Fattening</li> </ul>
17. Food safety and hygiene may include but are not limited to:	<ul style="list-style-type: none"> <li>• HACCP</li> <li>• Sanitation</li> </ul>
18. Pig products may include but are not limited to:	<ul style="list-style-type: none"> <li>• Sausages</li> <li>• Bacon</li> <li>• Lard</li> <li>• Cuts</li> <li>• Brawn</li> <li>• Smokies</li> <li>• Burgers</li> </ul>
19. Pig by-products may include but are not limited to:	<ul style="list-style-type: none"> <li>• Blood meal</li> <li>• Bone meal</li> <li>• Biogas</li> <li>• Manure</li> <li>• Brushes</li> <li>• Buttons</li> </ul>

VARIABLE	RANGE
	<ul style="list-style-type: none"> <li>Leather</li> </ul>
20. Condemned materials may include but are not limited to:	<ul style="list-style-type: none"> <li>Parasite infested organs</li> <li>Dead foetus</li> <li>Hydrated infested liver</li> <li>Whole carcass</li> </ul>
21. Data collection methods may include but are not limited to:	<ul style="list-style-type: none"> <li>Focus group discussions</li> <li>Media</li> <li>KNBS</li> <li>Observation</li> <li>Interviews</li> <li>Forecasting</li> </ul>
22. Contractual agreements may include but are not limited to:	<ul style="list-style-type: none"> <li>Verbal</li> <li>Written</li> </ul>
23. Animal welfare regulations may include but are not limited to:	<ul style="list-style-type: none"> <li>KVB</li> <li>KSPCA</li> <li>OIE</li> </ul>

## REQUIRED KNOWLEDGE AND SKILLS

This section describes the knowledge and skills required for this unit of competency.

### Required knowledge

The individual needs to demonstrate knowledge of:

- Pig handling
- Littering
- Rearing piglets, growers and finishers
- Rearing gilt, sow and boar for breeding
- Implementation of medication program
- Proper disposal of hazardous wastes

- Feeding habit of pig
- Digestive system of pigs
- Building materials, tools and equipment
- Consideration in siting a pig unit
- Development and management contract document
- Housing care, repair and maintenance
- Monitoring work progress
- Pig housing types and designs
- Report writing and record keeping
- Requisition of building materials
- Safety precautions
- Terms of reference development
- Types of pig production systems

### **Required skills**

The individual needs to demonstrate the following skills:

- Analytical
- Communication
- Critical thinking
- Decision making
- Equipment operation
- Feed handling
- Problem solving
- Record keeping
- Routine management skills
- Report Writing

### **EVIDENCE GUIDE**

This provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills range.

1. Critical aspects of competency	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Designed pig structure</li> <li>1.2 Constructed pig production structures based on available resources</li> <li>1.3 Prepared pig breeding stock</li> <li>1.4 Mated pigs</li> <li>1.5 Performed pig husbandry practices</li> <li>1.6 Selected and used clearing tools correctly.</li> <li>1.7 Recorded and stored construction materials appropriately.</li> <li>1.8 Maintained a clear pig unit repair and maintenance records.</li> <li>1.9 Slaughtered pigs based on Kenya Meat Control Act.</li> <li>1.10 Marketed pigs based on market demands.</li> <li>1.11 Prepared pig production records based on organization's record management guidelines</li> </ul>
2. Resource implications	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> <li>2.1 Access to relevant workplace where assessment can take place</li> <li>2.2 Appropriately simulated environment where assessment can take place</li> <li>2.3 A busy pig farm which is in the process of upscaling production or</li> <li>2.4 A farm starting/diversifying into pig production.</li> </ul>
3. Methods of assessment	<p>Competency in this unit may be assessed through:</p> <ul style="list-style-type: none"> <li>3.1 Third-party reports</li> <li>3.2 Portfolio of Evidence</li> <li>3.3 Interview</li> <li>3.4 Written tests</li> <li>3.5 Observation</li> <li>3.6 Oral questioning</li> </ul>
4. Context of assessment	<p>Competency may be assessed in a:</p> <ul style="list-style-type: none"> <li>4.1 Off-the-job</li> <li>4.2 On-the-job</li> </ul>

	4.3 During industrial attachment
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector and workplace job role is recommended.

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