



Australian Government

AMPREN305 Operate a blood coagulation and drying process

Release: 1

AMPREN305 Operate a blood coagulation and drying process

Modification History

Release	Comments
Release 1	This version released with AMP Australian Meat Processing Training Package Version 7.0.

Application

This unit of competency describes the skills and knowledge required by workers to operate a blood coagulation and drying process including preparation, loading raw material, operation, monitoring and shut down.

This unit applies to individuals who work under broad direction in an industrial rendering plant or abattoir and who are responsible for operating and monitoring a blood coagulation and drying process. It includes safety compliance using Hazard Analysis and Critical Control Point (HACCP) techniques, process and product quality requirements, and solving problems that arise with the process.

All work must be carried out to comply with workplace procedures, according to state/territory health and safety, environmental and meat rendering regulations, legislation and standards that apply to the workplace.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Unit Sector

Rendering (REN)

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare for blood coagulation and drying	1.1 Check work order, operational status of services and availability of consumables

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
process	1.2 Identify hazards, assess and control risks according to workplace health and safety procedures 1.3 Identify food safety hazards, assess and control risks according to HACCP principles 1.4 Select and fit personal protective equipment and contamination control equipment 1.5 Undertake preoperational checks of machinery and equipment according to workplace procedures and/or manufacturer requirements 1.6 Transfer blood from slaughter floor or transport vehicles, into holding tanks and add appropriate chemicals. 1.7 Visually monitor the quantity and quality of raw blood product to ensure required specifications are met
2. Undertake blood coagulation and separation	2.1 Start blood coagulation and separation process 2.2 Control steam flow and raw blood flow to facilitate coagulation of blood 2.3 Monitor coagulation of blood and separation according to process specifications or process requirements 2.4. Conduct visual checks to determine colour of stick water discharge 2.5 Use modulating valve to control temperature for blood coagulation 2.6 Identify and correct out-of-specification processes and product
3. Operate blood drying process	3.1 Regulate flow of coagulated blood into dryer and monitor dryer discharge temperature 3.2 Operate equipment and monitor blood meal for moisture content 3.3 Take blood meal samples to determine moisture content
4. Operate screening and milling of blood meal	4.1 Check milling and vibrating screens for holes and blockages to ensure correct particle size in blood meal 4.2 Check conveying equipment to ensure it is dry and clean to avoid bacterial contamination 4.3 Monitor odours and other environmental emissions according to workplace procedures 4.4 Operate screening and milling equipment and monitor process 4.5 Take blood meal samples for salmonella testing according to

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	quality assurance (QA) program 4.6 Identify and rectify processing faults according to workplace procedures
5. Package blood meal and load out	5.1 Bag blood meal and apply labels according to product specifications, quality control and regulatory requirements 5.2 Store packaged blood meal in a clean dry environment and isolate product for holding and testing 5.3 Isolate samples of bagged product for future testing according to QA program 5.4 Complete load out documentation as per QA program and dispatch for transport
6. Shut down coagulation and drying process	6.1 Clean blood coagulation and drying equipment with water and approved chemicals according to QA program 6.2 Shut down the equipment safely according to operating procedures 6.3 Identify and report maintenance requirements according to workplace procedures 6.4 Maintain workplace records in appropriate format 6.5 Conduct handover of blood coagulation and drying operation to another team member when required

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential for performance in this unit of competency but are not explicit in the performance criteria.

Skill	Description
Reading	- Interpret operating manuals for blood processing machinery and equipment - Read and interpret gauges and symbols
Writing	Complete records using industry terminology
Oral Communication	Use open and closed questions to clarify information

Skill	Description
Numeracy	Estimate and measure volume (mls, L), temperature (degrees Celsius), moisture percentage, steam flow and blood flow

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AMPAREN305 Operate a blood coagulation and drying process	AMPA3088 Operate blood processing plant	Merged with AMPA3089 Produce rendered products hygienically Unit title and application changed to better reflect work task Unit sector added, unit code updated Previous element 1 removed and new element 1 added New elements 2,3,4,5,6 added Performance criteria added, revised, reordered, or merged for clarity Foundation skills updated Performance Evidence, Knowledge Evidence and Assessment Conditions updated	Not equivalent
AMPAREN305 Operate a blood coagulation and drying process	AMPA3089 Produce rendered products hygienically	Merged with AMPA3088 Operate blood processing plant Unit title and application changed to better reflect work task Unit sector added, unit code updated	Not equivalent

Links

Companion Volumes, including Implementation Guides, are available at VETNet: -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5e2e56b7-698f-4822-84bb-25adbb8443a7>

Assessment Requirements for AMPREN305 Operate a blood coagulation and drying process

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Performance Evidence

An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit.

There must be evidence that the individual has safely set up, operated, monitored and shut down two separate blood coagulation and drying processes to convert raw materials into blood meal products according to specific work orders.

For each process, there must be evidence that the individual has:

- confirmed the product quantity and quality requirements
- identified at least three food safety hazards, assessed and controlled risk using HACCP techniques and workplace health and safety requirements
- identified at least three safety hazards, assessed and controlled risk using workplace health and safety procedures
- selected and correctly fitted appropriate personal protective equipment and clothing required for worker safety and food contamination control
- conducted preoperational check of machinery and equipment including access to emergency stops and isolation controls in work area
- set up and calibrated blood coagulation and drying equipment including temperature and duration
- completed cleaning of blood coagulation and drying equipment according to hygienic requirements
- identified and taken corrective action for two of the following:
 - flow of coagulated blood
 - dryer discharge temperature
 - colour of stick water
 - spills
 - contamination
- monitored environmental emissions according to workplace and Environmental Protection Agency (EPA) requirements, including odour control and one of the following:
 - waste water

- heat recovery
- noise
- heat
- completed written production records using accurate industry terminology
- provided a verbal briefing during handover process to team member.

Knowledge Evidence

An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:

- purpose and steps related to rendering process and function of blood coagulation and drying process, from blood collection to load out of blood meal
- workplace health and safety requirements associated with the operation of a blood coagulation and drying process
- workplace procedures for safe movement of workers and visitors in and around blood coagulation and drying process machinery and equipment
- key features of HACCP principles related to blood coagulation and drying processes
- key features of workplace procedures for the operation of a blood coagulation and drying process including:
 - agents which affect quality of raw blood in the holding tank
 - blood processing operations Critical Control Points
 - qualities of raw materials and final product
 - application of preservatives to aged blood
 - equipment cleanliness requirements to meet food safety standards
 - workplace and end user blood meal specifications
- AS5008 Hygienic Rendering of Animal Products
- Australian Renderers Association's Code of Practice for Hygienic Rendering of Animal Products, including cleaning and sanitation of blood processing equipment
- WHS risks associated with handling and coagulating raw blood including hydrogen sulfide
- key features of regulatory requirements for Restricted Animal Material, including cross contamination
- workplace and EPA requirements for monitoring environmental emissions, including;
 - odour control
 - waste water
 - heat recovery
 - noise
- Quality Assurance (QA) program requirements for blood processing and coagulation, including:
 - labelling and traceability
 - cleaning equipment, with water and approved chemicals.

Assessment Conditions

Assessment of the skills in this unit of competency must take place under the following conditions:

- physical conditions:
 - skills must be demonstrated in a blood processing plant or an environment that accurately represents workplace conditions
- resources, equipment and materials:
 - equipment for blood coagulation and drying processing tasks specified in the performance evidence
- specifications:
 - two blood coagulation and drying process work orders stipulated in the performance evidence
 - workplace procedures for a blood coagulation and drying process and operation of machinery and equipment stipulated in the performance evidence
 - workplace procedures for worker safety and contamination control
 - specific workplace documents such as workplace procedures and QA system
 - manufacturer operating instructions for blood coagulation and drying equipment.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

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<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5e2e56b7-698f-4822-84bb-25adbb8443a7>