



Australian Government

AMPQUA406 Apply meat science

Release: 1

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Modification History

| Release | Comments |
|-----------|---|
| Release 1 | This version released with AMP Australian Meat Processing Training Package Version 8.0. |

Application

This unit describes the skills and knowledge required to apply meat science to the eating quality of meat and to interpret scientific data to predict probable impacts on meat eating quality.

It is a Meat Standards Australia (MSA) requirement that workplaces with a licence Level 1(b) have an MSA Coordinator who has completed this unit or an MSA approved equivalent unit.

This unit applies to individuals who work in the red meat industry in a quality assurance or management role. The skills and knowledge specified in this unit enable an individual to interpret meat processing data and to recommend improvements to control and enhance the eating quality of meat products.

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

MSA requirements include adherence to the MSA Standards Manual for Grading, MSA Standards Manual for Saleyard Consignment and MSA Standards Manual for Trade Mark Usage.

As well as MSA requirements, legislative and regulatory requirements apply to meat inspection and meat safety and are enforced through state/territory jurisdictions. Users must check with the relevant regulatory authority before delivery.

Pre-requisite Unit

Nil

Unit Sector

Quality Assurance (QUA)

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. Apply knowledge of muscle structure and biochemistry to meat quality and the factors that affect it | <p>1.1 Identify and explain biological mechanisms (both pre- and post-slaughter) that affect meat quality in beef</p> <p>1.2 Identify the pattern of tissue development in the body and the pattern of deposition within the muscle and fat deposits, including the extent to which the composition of fat deposits can be manipulated by production factors</p> <p>1.3 Identify structure of skeletal muscles in terms of the myofibre and connective tissue components and the effect these structures have on eating quality</p> <p>1.4 Identify biochemical events that occur in muscle early post-mortem and their significance in subsequent meat quality</p> |
| 2. Identify production and pre-slaughter factors that affect meat quality | <p>2.1 Identify impacts of production factors on meat quality</p> <p>2.2 Describe pre-slaughter factors that affect meat quality</p> |
| 3. Identify processing factors that impact eating quality | <p>3.1 Explain pH/temperature window and how it impacts palatability</p> <p>3.2 Describe role of electrical stimulation in controlling the rate of glycolysis in the carcass</p> <p>3.3 Identify and explain the impact of stretching muscles pre-rigor on palatability</p> <p>3.4 Describe process of ageing, its impact on tenderness, and methods for extending the storage life of fresh meat, including the application of packaging technologies</p> <p>3.5 Describe impact of cooking on palatability of meat</p> |
| 4. Describe quality attributes of meat | <p>4.1 Identify factors that control changes in colour of fresh meat</p> <p>4.2 Describe development of marbling fat and its impact on palatability</p> <p>4.3 Explain impact of drip on both the appearance and palatability of meat</p> |
| 5. Identify and evaluate the MSA cuts-based grading scheme | <p>5.1 Explain Palatability Analysis Critical Control Points (PACCP) approach to meat grading</p> <p>5.2 Describe principles behind the development of the MSA carcass pathways system, including tasting protocols</p> <p>5.3 Establish impact of various production, processing and value-adding inputs on the palatability of beef using the MSA model</p> <p>5.4 Evaluate potential benefits of a cuts-based grading system to</p> |

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|--|---|
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| | various industry sectors 5.5 Analyse alternative grading schemes and their various attributes |
| 6. Interpret and analyse data to predict probable impacts on meat eating quality | 6.1 Access meat processing data 6.2 Analyse data and predict probable impacts of production and processing on meat quality 6.3 Identify potential solutions for eating quality problems |

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 |
|--------------------|---|
| Oral communication | <ul style="list-style-type: none"> Use industry terminology to describe meat quality Explain scientific principles simply and clearly |
| Numeracy | <ul style="list-style-type: none"> Analyse data to recognise trends Collect data using objective measurement technologies |

Unit Mapping Information

| Code and title current version | Code and title previous version | Comments | Equivalence status |
|---------------------------------------|--|---|---------------------------|
| AMPQUA406 Apply meat science | AMPA403 Apply meat science | Unit sector code updated Performance Criteria clarified Foundation Skills added Performance Evidence, Knowledge Evidence and Assessment Conditions revised | 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>