AMPA403 Apply meat science

Release: 1

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Modification History

Release	TP Version	Comment
1	AMPv1.0	Initial release

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 enterprises with a licence Level 1(b) have a MSA Coordinator who has completed this unit or a MSA approved equivalent unit.

The skills and knowledge gained from this unit will enable an individual to interpret meat processing data and to recommend improvements to control and enhance the eating quality of meat products.

This unit is suitable for people working in the red meat industry in a Quality Assurance (QA) or management role.

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.

This unit must be delivered in the context of Australian meat processing standards and regulations.

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

Pre-requisite Unit

Nil.

Unit Sector

Elements and Performance Criteria

Element	Performance criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.

Element	Performance criteria
1. Apply knowledge of muscle structure and biochemistry to meat quality and the factors that affect it	1.1 Explain biological mechanisms (both pre and post slaughter) that affect meat quality in beef 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 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 1.4 Identify biochemical events that occur in muscle early post-mortem and their significance in subsequent meat quality
2. Identify production and pre-slaughter factors that affect meat quality	2.1 Identify impacts of production factors on meat quality 2.2 Explain pre-slaughter factors
3. Identify processing factors that impact eating quality	3.1 Explain pH/temperature window and how it impacts palatability 3.2 Describe role of electrical stimulation in controlling the rate of glycolysis in the carcase 3.3 Explain impact of stretching muscles pre-rigor on palatability 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 3.5 Describe impact of cooking on palatability of meat
4. Describe quality attributes of meat	4.1 Identify factors that control changes in colour of fresh meat 4.2 Describe development of marbling fat and its impact on palatability 4.3 Explain impact of drip on both the appearance and palatability of meat
5. Identify and evaluate the MSA cuts based grading scheme	5.1 Explain Palatability Analysis Critical Control Points (PACCP) approach to meat grading 5.2 Describe principles behind the development of the MSA carcase pathways system, including tasting protocols 5.3 Establish impact of various production, processing and value-adding inputs on the palatability of beef using the MSA model 5.4 Evaluate potential benefits of a cuts-based grading system to various industry sectors 5.5 Analyse alternative grading schemes and their various attributes
6. Interpret and analyse data to predict probable impacts on	6.1 Predict probable impacts of production and processing on meat quality 6.2 Identify potential solutions for eating quality problems

Element	Performance criteria
meat eating quality	

Foundation Skills

Foundation Skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Unit Mapping Information

MTMP404B Apply meat science	E

Links

Companion Volume implementation guides are found in VETNet -
https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5e2e56b7-698f-4822-84bb-25adbb8443a7