



Australian Government

AMPA400 Utilise refrigeration index

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 use the Refrigeration Index (RI) to validate compliance of a chilling and freezing process.

The Export Control Orders (ECO), which came into effect in July 2005, require the validation of all chilling processes using the RI.

This unit is applicable to Quality Assurance (QA) staff and regulators who utilise the RI to validate compliance of a chilling or freezing process.

The unit must be delivered and assessed in the context of Australian meat industry 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.
1. Define the RI	1.1 Explain RI measure and the uses of predictive microbiological model 1.2 Identify regulatory requirements for process compliance using the RI 1.3 Identify factors affecting microbial growth 1.4 Identify RI model parameters

Element	Performance criteria
2. Collect temperature data for RI	2.1 Set up data logger correctly 2.2 Place temperature sensor in product, taking into account the point of microbiological concern and recommended placement 2.3 Process time-temperature data into correct format for RI calculator
3. Select and define process to be validated	3.1 Define process in terms of output 3.2 Define production lot 3.3 Identify variables in the process 3.4 Identify number of measurements required 3.5 Identify when and where data collection should occur 3.6 Identify RI criteria
4. Calculate RI index	4.1 Load and open software 4.2 Select correct calculator options for process being validated 4.3 Calculate RI for process to be validated
5. Utilise RI to validate process	5.1 Compare RI with ECO requirements 5.2 Assess appropriateness of the data where RI does not comply 5.3 Take action to correct a non-conforming process 5.4 Make decisions on production disposition for a refrigeration breakdown
6. Document a validation process using the RI	6.1 Describe purpose, process and arrangements for validation 6.2 Describe data collection methods and calculation options used and summarise data collected 6.3 State validation decision

Foundation Skills

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

Range of Conditions

Unit Mapping Information

MTMP401B Utilise refrigeration index	E
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Links

Companion Volume implementation guides are found in VETNet -

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

Assessment Requirements for AMPA400 Utilise refrigeration index

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Performance Evidence

Evidence must demonstrate the candidate's consistency of performance over time at production speed.

The candidate must use the Refrigeration Index (RI) to validate compliance of a chilling and freezing process.

The candidate must demonstrate ability to:

- define a process and the relevant variables
- plan and manage the collection of data for a validation exercise
- arrange and document the validation of a chilling process using the RI
- input data into the RI index
- identify and resolve data inconsistencies
- process data into the correct format for the RI calculator
- review RI calculated and make decisions on process validation or product disposition
- maintain currency of knowledge and techniques through informal learning and personal research utilising resources including the internet, industry journals, Department of Agriculture notices and conference workshops
- identify and apply relevant workplace health and safety, regulatory and workplace requirements

Knowledge Evidence

The candidate must demonstrate a broad factual, technical and theoretical knowledge of:

- growth phases of microbes
- purpose of predictive microbiological models
- how and why RI is used
- parameters of the RI model
- product disposition using the RI
- ECO criteria for RI
- requirements for data collection
- different RI calculator options

- documentation requirements for process validation using RI
- factors affecting the growth of microbes
- meaning of log values
- regulatory requirements underpinning use of the RI

Assessment Conditions

Competency must be demonstrated utilising the RI calculator.

Assessment may involve processing real or simulated data.

A minimum of three different forms of assessment must be used.

Assessors must satisfy current standards for RTOs.

Links

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