



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **MSL975005A Conduct sensory analysis**

**Revision Number: 1**

## MSL975005A Conduct sensory analysis

### Modification History

Not applicable.

### Unit Descriptor

|                        |   |
|------------------------|---|
| <b>Unit descriptor</b> | This unit of competency covers the ability to set up and coordinate sensory analysis and assess the results obtained from a routine sensory analysis. |
|------------------------|---|

### Application of the Unit

|                                |  |
|--------------------------------|--|
| <b>Application of the unit</b> | <p>This unit of competency is applicable to laboratory technicians and technical officers working in the food processing industry sector. Although a supervisor may not always be present, the technician will follow standard operating procedures (SOPs) that will clearly describe the scope of permitted practice in modifying testing procedures and for communicating results to people outside of the laboratory.</p> <p>Industry representatives have provided case studies to illustrate the practical application of this unit of competency and to show its relevance in a workplace setting. These can be found at the end of this unit of competency under the section 'This competency in practice'.</p> |
|--------------------------------|--|

### Licensing/Regulatory Information

Not applicable.

## Pre-Requisites

|                           |  |  |
|---------------------------|--|--|
| <b>Prerequisite units</b> |  |  |
|                           |  |  |
|                           |  |  |

## Employability Skills Information

|                             |  |
|-----------------------------|--|
| <b>Employability skills</b> | This unit contains employability skills. |
|-----------------------------|--|

## Elements and Performance Criteria Pre-Content

|   |  |
|---|--|
| Elements describe the essential outcomes of a unit of competency. | Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide. |
|---|--|

## Elements and Performance Criteria

| ELEMENT   | PERFORMANCE CRITERIA   |
|---|--|
| 1. Select panellists/individuals for sensory analysis | 1.1. Perform initial screening of potential panellists/individuals based on the testing brief<br>1.2. Use information to select suitable people<br>1.3. Analyse and report the results used to establish a panel   |
| 2. Prepare panellists for sensory analysis            | 2.1. Prepare panellists for sensory analysis<br>2.2. Conduct any training required to detect test characteristics<br>2.3. Instruct panellists on recording and reporting requirements of test data   |
| 3. Prepare samples for sensory analysis               | 3.1. Prepare reference samples to be used for the sensory analysis specification<br>3.2. Prepare evaluation samples to sensory analysis specification<br>3.3. Apply food safety procedures in the preparation and presentation of samples<br>3.4. Identify and report on any defects or abnormalities in samples |
| 4. Conduct routine sensory analysis                   | 4.1. Select appropriate test materials for the information required<br>4.2. Ensure tests are conducted according to enterprise procedures<br>4.3. Analyse data<br>4.4. Report on process and results in accordance with enterprise procedures  |
| 5. Evaluate and report findings                       | 5.1. Assess the possible effects of group attributes<br>5.2. Review reliability of results for group bias<br>5.3. Complete all relevant documentation and present findings   |
| 6. Maintain a safe work environment                   | 6.1. Use established work practices to ensure personal safety and that of other personnel<br>6.2. Minimise the generation of wastes and environmental impacts<br>6.3. Ensure the safe collection of laboratory waste for subsequent disposal<br>6.4. Care for and store equipment and reagents as required       |

## Required Skills and Knowledge

### REQUIRED SKILLS AND KNOWLEDGE

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

#### Required skills

Required skills include:

- developing and using questionnaires
- consumer research methods
- completing the necessary documentation
- selecting suitable panellists
- recognising the significance of cultural and social contexts and communicating appropriately
- selecting appropriate test procedures
- preparing evaluation samples by dosing or processing
- analysing data
- communicating the significance of results, including the discussion of any errors and/or unexpected variation to appropriate personnel

#### Required knowledge

Required knowledge includes:

- anatomy, physiology and functions of taste and smell
- interaction of sensory activity (e.g. interaction between taste and smell and effect of temperature on samples)
- associated characteristics of mouth feel and appearance
- principles of effective control of the sensory testing environment (e.g. conditions that can dull sensitivity)
- likely causes of variation in results and their control
- principles of descriptive, discriminative and affective sensory analysis methods
- development and use of questionnaires
- use of consumer research methods
- features of sensory quality control
- relevant health, safety and environment requirements

## Evidence Guide

### EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

#### Overview of assessment

#### Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors should ensure that candidates can:

- complete the necessary documentation
- perform initial screening of panellists and determine their suitability
- select suitable panellists
- communicate appropriately and recognise the significance of cultural and social contexts
- select appropriate test procedures
- ensure samples are in a suitable condition for analysis
- accurately prepare evaluation samples by dosing or processing
- thoroughly analyse data
- communicate the significance of results, including the discussion of any errors and/or unexpected variation to appropriate personnel.

#### Context of and specific resources for assessment

This unit of competency is to be assessed in the workplace or simulated workplace environment.

This unit of competency may be assessed with:

- *MSL925001A Analyse data and report results.*

Resources may include:

- statistical data sheets and charts, logbooks and scientific calculators
- relevant ISO standards and AS standards
- sensory evaluation panel room and group of panellists
- access to a range of chemicals and samples.

#### Method of assessment

The following assessment methods are suggested:

- review of written reports which include an analysis of findings from sensory tests conducted by the candidate
- observation of candidate conducting panel tests
- written/oral questions to assess underpinning

**EVIDENCE GUIDE**

|                                    |   |
|------------------------------------|---|
|                                    | <p>knowledge</p> <ul style="list-style-type: none"> <li>• responses to market scenarios and/or case studies.</li> </ul> <p>In all cases, practical assessment should be supported by questions to assess underpinning knowledge and those aspects of competency which are difficult to assess directly.</p> <p>Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.</p> <p>Access must be provided to appropriate learning and/or assessment support when required.</p> <p>The language, literacy and numeracy demands of assessment should not be greater than those required to undertake the unit of competency in a work like environment.</p>   |
| <b>This competency in practice</b> | <p>Industry representatives have provided the case study below to illustrate the practical application of this unit of competency and to show its relevance in a workplace setting.</p> <p><b>Food processing</b></p> <p>The quality manager in a dairy food company has an identified product which does not meet enterprise standards. An alternative ingredient has been supplied and used. The sensory analyst has the task of determining whether consumers will be able to detect any differences in this product compared to the standard product. The sensory analyst chooses an appropriate difference test and considers a suitable panellist group from log book records. Samples of the relevant products are stored and prepared under standard test conditions. A full sensory panel is conducted with score sheets, coding, booth preparation and product presentation. After testing, the results are analysed and the test conditions are reviewed. The overall results are presented as a written report to management.</p> |

## Range Statement

### RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

#### Codes of practice

Where reference is made to industry codes of practice, and/or Australian/international standards, it is expected the latest version will be used

#### Standards, codes, procedures and/or enterprise requirements

Standards, codes, procedures and/or enterprise requirements may include:

- Australian and international standards, such as:
  - AS 2542 Sensory analysis
  - AS 2609.1-2005 Methods for assessing modifications to the flavour of foodstuffs due to packaging - Sensory analysis
  - AS 2609.2-1983 Materials used for the packaging of food and beverages - Methods for the assessment of odour and taint - Instrumental methods
- SOPs
- specifications
- sampling plans
- sensory analysis criteria
- reporting documentation

#### Information used to select suitable panellists may

Information used to select suitable panellists may include:

- selection criteria
- whether people have been trained or not
- information from an initial screening questionnaire
- availability
- characteristics of unsuitable people such as smokers
- sources of bias
- company procedures

#### Samples

Samples may include:

| <b>RANGE STATEMENT</b>                                |  |
|---|--|
|   | <ul style="list-style-type: none"> <li>• raw materials</li> <li>• ingredients</li> <li>• stages of production</li> <li>• final products</li> <li>• process aids and adjuncts</li> <li>• packaging materials</li> <li>• materials which come in contact with the product</li> </ul>   |
| <b>Tests</b>  | <p>Tests may be performed to determine the following aspects of a sample:</p> <ul style="list-style-type: none"> <li>• flavour</li> <li>• appearance</li> <li>• aroma</li> <li>• texture</li> </ul>  |
| <b>Testing methods</b>                                | <p>Testing methods may include:</p> <ul style="list-style-type: none"> <li>• triangular test, duo-trio test, ranking test, paired comparison test and blending test</li> <li>• flavour profile</li> <li>• threshold analysis</li> <li>• discriminative testing, descriptive testing and affective testing</li> </ul>                     |
| <b>Attributes which could affect the results</b>      | <p>Attributes which could affect the results may include:</p> <ul style="list-style-type: none"> <li>• age, gender and ethnicity</li> <li>• smoking</li> <li>• medications</li> <li>• qualifications and trained/untrained</li> <li>• random panel</li> <li>• cultural background, as related to food preferences/food styles</li> </ul> |
| <b>The primary flavour characteristics</b>            | <p>The primary flavour characteristics include:</p> <ul style="list-style-type: none"> <li>• sweet/sour</li> <li>• umamic</li> <li>• bitter/salty</li> </ul>   |
| <b>The results obtained from the sensory analysis</b> | <p>The results obtained from the sensory analysis may be applied to:</p> <ul style="list-style-type: none"> <li>• marketing studies</li> <li>• purchasing requirements</li> </ul>  |

| <b>RANGE STATEMENT</b>  |  |
|---|--|
|   | <ul style="list-style-type: none"> <li>• quality assurance at various stages of production</li> <li>• quality control and troubleshooting</li> <li>• research and development of new products</li> <li>• customer returns</li> <li>• product recalls</li> </ul>  |
| <b>Occupational health and safety (OHS) and environmental management requirements</b> | <p>OHS and environmental management requirements:</p> <ul style="list-style-type: none"> <li>• all operations must comply with enterprise OHS and environmental management requirements, which may be imposed through state/territory or federal legislation - these requirements must not be compromised at any time</li> <li>• all operations assume the potentially hazardous nature of samples and require standard precautions to be applied</li> <li>• where relevant, users should access and apply current industry understanding of infection control issued by the National Health and Medical Research Council (NHMRC) and State and Territory Departments of Health</li> </ul> |

## Unit Sector(s)

|                    |         |
|--------------------|---------|
| <b>Unit sector</b> | Testing |
|--------------------|---------|

## Competency field

|                         |  |
|-------------------------|--|
| <b>Competency field</b> |  |
|-------------------------|--|

## Co-requisite units

| Co-requisite units |  |  |
|--------------------|--|--|
|                    |  |  |
|                    |  |  |