**NZQA**

**Approved**

Achievement standard: 91353 Version 3

Standard title: Demonstrate understanding of advanced concepts used in preservation and packaging for product storage

**Level:** 2

**Credits:** 4

**Resource title:** Horse feed

Resource reference: Processing Technologies VP-2.62 v2

Vocational pathway: Primary Industries

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| Quality assurance status | These materials have been quality assured by NZQA. NZQA Approved number A-A-02-2015-91353-02-8276 |
| Authenticity of evidence | Assessors/educators must manage authenticity for any assessment from a public source, because learners may have access to the assessment schedule or example material.Using this assessment resource without modification may mean that learners’ work is not authentic. Assessors/ educators may need to change figures, measurements or data sources or set a different context or topic to be investigated or a different text to read or perform. |

Vocational Pathway Assessment Resource

Achievement standard: 91353

Standard title: Demonstrate understanding of advanced concepts used in preservation and packaging for product storage

Level: 2

Credits: 4

Resource title: Horse feed

Resource reference: Processing Technologies VP-2.62 v2

Vocational pathway: Primary Industries

Learner instructions

# Introduction

This assessment activity requires you to demonstrate understanding of advanced concepts used in preservation and packaging for horse feed storage.

You are going to be assessed on how comprehensive your understanding is of advanced concepts used in preservation and packaging for horse feed storage.

The following instructions provide you with a way to structure your work so you can demonstrate what you have learnt and achieve success in this standard.

Assessor/educator note: It is expected that the assessor/educator will read the learner instructions and modify them if necessary to suit their learners.

# Task

You are to prepare a presentation on different horse feed products. The products you investigate must be those that are preserved (processed), packaged, stored and transported around New Zealand. You may consider haymaking, grains, mixes, pellets, extruded and textured products, balage, and supplements.

Gather information, examples, and evidence to use in your presentation.

This will include:

* the different types of decay that could occur typically in horse feed products
* the different types of preservation, packaging, and storage methods used for horse feed that is transported around New Zealand
* the labelling and marketing requirements for New Zealand
* the use of labelling as a marketing or promotional technique in a national environment.

Consult with your assessor/educator and agree on an appropriate form for your presentation. You could include photographs with annotations, written discussions, diagrams, and tables.

Prepare a presentation in which you:

* compare and contrast a range of preservation and packaging techniques that would enable horse feed to be stored and transported around New Zealand
* explain how each type of preservation and packaging limits the decay and describe how this maintains the product’s integrity as it is transported around the country
* explain why a particular combination of preservation and packaging techniques was chosen for storage in a national environment
* discuss the labelling requirements for horse feed products and how labels could be used as a marketing tool.

# Resources

The following resources may be useful:

* NRM Stock feed for better livestock performance <http://nrm.co.nz/>
* Dunstan Horse Feeds [www.dunstan.co.nz](http://www.dunstan.co.nz)
* What are you feeding your horse? An A to Z guide <http://horsetalk.co.nz/2012/11/06/a-to-z-horse-feed-guide/>
* Don’t Pass on Processed Feeds <http://www.ker.com/library/equinews/v4n4/v4n404.pdf>
* Horse Feed Ingredients Options, Alternatives, Balances<http://vitecnutrition.co.nz/images/File/Horse%20feed%20ingredient%20options.pdf>

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Assessor/Educator guidelines

# Introduction

The following guidelines are supplied to enable assessors/educators to carry out valid and consistent assessment using this internal assessment resource.

As with all assessment resources, education providers will need to follow their own quality control processes. Assessors/educators must manage authenticity for any assessment from a public source, because learners may have access to the assessment schedule or example material. Using this assessment resource without modification may mean that learners' work is not authentic. The assessor/educator may need to change figures, measurements or data sources or set a different context or topic. Assessors/educators need to consider the local context in which learning is taking place and its relevance for learners.

Assessors/educators need to be very familiar with the outcome being assessed by the achievement standard. The achievement criteria and the explanatory notes contain information, definitions, and requirements that are crucial when interpreting the standard and assessing learners against it.

# Context/setting

This activity requires learners to demonstrate comprehensive understanding of advanced concepts used in preservation and packaging for product storage. They will investigate a range of methods used to preserve and package horse feed. The methods being investigated must be those that would enable the product to be packaged, stored and transported around New Zealand.

# Conditions

This is an individual task. The learner’s presentation could be in the form of a slideshow, display board, portfolio, or written report, and could include annotated flow diagrams with written discussion, photographs and drawings. Learners should confirm with you the format of their presentation.

# Resource requirements

Learners will require internet access to suitable reference material.

# Additional information

None.

## Other possible contexts for this vocational pathway

The context of this resource could be adapted for other primary industries involving animals such as dairy, pigs or poultry, where learners demonstrate understanding of the preservation and packaging for animal feed storage.

# Assessment schedule: Processing Technologies 91353 – Horse feed

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| Evidence/Judgements for Achievement | Evidence/Judgements for Achievement with Merit | Evidence/Judgements for Achievement with Excellence |
| The learner demonstrates understanding of advanced concepts used in preservation and packaging for horse feed storage by:* describing the links between preservation and packaging techniques for horse feed and types of decay
* describing how horse feed could be effectively preserved, packaged and stored to maintain product integrity in a national environment

For example:* the preservation techniques may include drying, freeze drying, heat sterilisation, decreasing water activity, vacuum packing, and fermenting
* the packaging techniques may include balage wrapping, co-extruded barrier films, bag in box, pallets, bulk packaging, and intermediate bulk containers
* the decay types may include microbiological growth, separation, loss of colour, loss or gain of moisture, loss of viability, loss of nutritional content, quality loss due to enzymatic action, vibration, and shock and crushing during transport and handling
* the description includes the use of the correct technical terms, and gives the details of what the preservation and packaging techniques do to prevent the decay mechanisms
* consideration is given to the cutting of hay and storing and transporting it as balage to retain nutrients and the processing of sugar beet pulp through dehydration to avoid mould production for use as a horse feed when forage is limited.
* describing legal and marketing requirements for labelling in a national environment

For example:* the presentation includes a description of the legal labelling requirements for horse food. Learners annotate labelling showing the key features of this type of labelling (e.g. must have a nutritional content label and they can point to this on the label ingredients listing, and ‘use by’ labelling).

*The above expected learner responses are indicative only and relate to just part of what is required.* | The learner demonstrates in-depth understanding of advanced concepts used in preservation and packaging for horse feed storage by:* explaining the links between preservation and packaging techniques for horse feed and the types of decay
* explaining why a particular combination of preservation and packaging techniques was chosen for horse feed storage in a national environment

For example:The learner explains why horse feed products are produced and packaged in different ways to prevent decay and deliver the qualities required by consumers.Reasons will be related to:* controlling and preventing different types of decay
* maintaining product integrity during storage and transportation in the national environment
* legal requirements for labelling and consumer
* expectation for marketing.

The ensiling of hay and marketing as balage is explained in terms of the effect of the fermentation process resulting in greater nutrient retention than sun-curing.* describing legal and marketing requirements for labelling in a national environment

For example:* the presentation includes a description of the legal labelling requirements for horse food. Learners annotate labelling showing the key features of this type of labelling (e.g. must have a nutritional content label and they can point to this on the label ingredients listing, and ‘use by’ labelling).

*The above expected learner responses are indicative only and relate to just part of what is required.* | The learner demonstrates comprehensive understanding of advanced concepts used in preservation and packaging for horse feed storage by:* explaining why a particular combination of preservation and packaging techniques was chosen for horse feed storage in a national environment

For example:The learner explains why horse feed products are produced and packaged in different ways to prevent decay and deliver the qualities required by consumers.Reasons will be related to:* controlling and preventing different types of decay
* maintaining product integrity during storage and transportation in the national environment
* legal requirements for labelling and consumer
* expectation for marketing.

The ensiling of hay and marketing as balage is explained in terms of the effect of the fermentation process resulting in greater nutrient retention than sun-curing.* comparing and contrasting preservation and packaging techniques of horse feed in a national environment

For example:The learner compares and contrasts options for preservation and packaging for horse feed. The discussion includes the factors that are considered when selecting both preservation and packaging techniques for the product. Factors could include:* the action of the preservation method
* the performance attributes of the packaging material
* the financial and environmental considerations and the requirements of the distribution channel and the consumer
* the advantages and disadvantages of hay sold fresh as bales and cubes, fermented as balage, and extruded and dried as pellets is discussed in terms of for example, production methods and costs, storage and transportation, ease of use and nutritional value.
* discussing why labelling is legally required and how labelling for marketing is used in a national environment

For example:* the discussion includes the reasons that labelling is required (e.g. legal requirements, consumer information). It includes a rationale behind each aspect of the label and gives the reasons for its inclusion
* the use of marketing labelling to tempt prospective customers to purchase the product is discussed. For example ingredients targeted for breeding, training, racing or sports.

*The above expected learner responses are indicative only and relate to just part of what is required.* |

Final grades will be decided using professional judgement based on an examination of the evidence provided against the criteria in the Achievement Standard. Judgements should be holistic, rather than based on a checklist approach.