

**Internal Assessment Resource**

Agribusiness Level 3

This resource supports assessment against Achievement Standard 91869

Standard title: Analyse future proofing strategies to ensure long term viability of a business

Credits: 4

Resource title: What’s that stink?

**Resource reference:** Agribusiness 3.8A Version 1

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| This resource:* Clarifies the requirements of the achievement standard
* Supports good assessment practice
* Should be subjected to the school’s usual assessment quality assurance process
* Should be modified to make the context relevant to students in their school/kura environment and ensure that submitted evidence is authentic
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| Date version published by Ministry of Education | December 2017 Version 1To support internal assessment from 2018 |
| Authenticity of evidence | Teachers must manage authenticity for any assessment from a public source, because students may have access to the assessment schedule or exemplar material.Using this assessment resource without modification may mean that students’ work is not authentic. Teachers 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. |

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Teacher guidelines

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

Teachers 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 students against it.

**Context/setting**

This activity requires students to comprehensively analyse future proofing strategies to ensure long term viability of a business.

At present, the biggest biosecurity threat to kiwifruit growers is the Brown Marmorated Stink Bug. It is currently not established in New Zealand due to a number of on and off-orchard strategies. Kiwifruit growers know that they need to future proof by implementing biosecurity strategies on their orchards to ensure the long term viability of their businesses.

Before beginning this assessment, you will need to provide opportunities for the students to gain understanding of:

* The primary industry and a range of agribusinesses
* Future proofing strategies in Aotearoa/New Zealand
* Future needs of a business

You may want to consider a visiting speaker who works in the chosen business for further understanding, or providing a case study.

**Conditions**

Where a group approach is used, the teacher needs to ensure that there is evidence that each student has met all aspects of the standard.

A student can present their information in a format of their own choice. For example, written paragraphs, tables, graphs, videos and/or diagrams, which could form part of a poster, slideshow, a blog or website. You may want to give students guidance on the appropriate style and format for their findings. This achievement standard does not assess format or style.

As a guide, the assessment should reflect approximately 40 hours of teaching, learning and assessment in and out of the classroom.

Conditions of Assessment related to this achievement standard can be found at <http://ncea.tki.org.nz/Resources-for-Internally-Assessed-Achievement-Standards>

**Resource requirements**

Access to the Internet and to relevant sources of information.

**Additional information**

If you are choosing an agribusiness context for this assessment, there is no expectation to cover all seven primary industries.

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Student instructions

**Introduction**

This assessment activity requires you to analyse future proofing strategies to ensure the long term viability of an identified kiwifruit orchard business.

You are going to be assessed on how comprehensively you analyse future proofing strategies to ensure long term viability of the business.

Teacher note: Insert due dates and timeframes

**Task**

At present, the biggest biosecurity threat to kiwifruit growers is the Brown Marmorated Stink Bug. It is currently not established in New Zealand due to a number of on and off-orchard strategies. Kiwifruit growers know that they need to future proof by implementing biosecurity strategies on their orchards to ensure the long term viability of their businesses.

You will need to comprehensively analyse future proofing strategies to ensure long term viability of a kiwifruit orchard business in relation to the Brown Marmorated Stink Bug, and select and justify one strategy that best meets the future needs of the business:

* Identify the future needs of the kiwifruit orchard.
* Thoroughly explain biosecurity future proofing strategies that the business could use to ensure long term viability.
* Recommend the strategy that best meets the future needs of the business.
* Evaluate and justify the best strategy that meets the future needs of the business ensuring long term viability.
* List the sources you have used.

You may choose how you would like to present your work; however, it should be no longer than 2000 words. Discuss options with your teacher.

Assessment schedule: Agribusiness 91869 - What’s that stink?

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| **Evidence/Judgements for Achievement** | **Evidence/Judgements for Achievement with Merit** | **Evidence/Judgements for Achievement with Excellence** |
| The student analyses future proofing strategies to ensure long term viability of a business.In their presentation, the student:* explains some biosecurity future proofing strategies that a kiwifruit orchard business could use to ensure long term viability.

**For example: (partial evidence)**Biosecurity is the exclusion, eradication, or effective management of risks posed by pests and diseases to the economy, environment and human health. Biosecurity future proofing strategies that can be implemented on the orchard are:Technological. * There is a range of technological tools that the grower can employ for their use in biosecurity, such as traps, toxins, physical barriers, identification devices, and remote sensing on the orchard.

Geographic. * Greenacre Kiwifruit Orchard is in a geographical area that may be threatened with a biosecurity risk, they need to ensure that they have measures in place to combat it and to reduce its spread.

Social.* The grower needs to ensure that the local community understands the risk of biosecurity not only to their business but to the local community. Get support from the local community.

Biological.* Implement a biosecurity orchard management plan.
* Make sure robust hygiene procedures are in place.
* Implement a monitoring programme to keep an eye out for any suspected pests and diseases.
* Overseas mail needs to be opened in an enclosed space to contain any hitch-hiking pests.
* Develop a year-round protective spray plan using recommended products with different modes of action to maximise disease control.

Economic.* The implementation of biosecurity measures such as monitoring, costs a grower a lot of money, however, if Greenacre Kiwifruit Orchard had a biosecurity breach, it will cost the grower much more in elimination and / or control of the pest or disease.

*The examples above are indicative samples only.* | The student analyses, in-depth, future proofing strategies to ensure long term viability of a business.In their presentation, the student:* explains what are the future needs of a kiwifruit orchard business
* explains thoroughly some biosecurity future proofing strategies that an orchard business could use to ensure long term viability
* recommends the strategy that best meets the future needs of the business.

**For example: (partial evidence)**In addition to the evidence for achieved:The future needs of Greenacre Kiwifruit Orchard are:* To ensure long term viability.
* To ensure the kiwifruit are safe by emphasising the use of non-chemical techniques to limit pests and diseases.
* To minimise any adverse impacts on human health or the environment.
* To make a profit.

Biosecurity future proofing strategies that can be implemented on the orchard are:Technological. * There is a range of technological tools that Greenacre Kiwifruit Orchard can employ for use in biosecurity, such as traps, toxins, physical barriers, identification devices, and remote sensing on the orchard. As biosecurity threats change, the use of technological tools becomes more important and a necessity to ensure that the orchard remains pest and disease free. However, they need to keep up and be relevant, so research and development needs to be maintained.

Geographic. * All orchards in a geographical area that may be threatened with a pest or a disease, need to ensure that they have measures in place to combat it and to reduce its spread. Greenacre Kiwifruit Orchard may need to work with other orchards to mitigate the impacts.

Social.* The grower needs to ensure that the local community understands the risks of biosecurity not only to their business but to the local community. The grower may need to employ a range of methods to inform the local community such as flyers, posters, talks etc. to make the community aware of the risks and what they can do to help in the prevention of the spreading of pests and diseases. The local community can also be involved in surveillance and monitoring for unwanted pests and diseases.

Economic.* Kiwifruit represents 20 per cent of the area's GDP and employment. If a pest or disease hits, it will have an immediate impact on growers' discretionary spending and spread rapidly to contractors, suppliers, manufacturers, pack houses, seasonal workers and retailers.

Biological.* Implement a biosecurity orchard management plan. This involves hygiene protocol, erection of signage, staff induction procedures, orchard access, tool hygiene, and equipment cleaning.
* Make sure robust hygiene procedures are in place. Growers are aware that any equipment, vehicles, or person entering their orchard could potentially introduce or spread pests or diseases. Therefore, they need to clean all risk items that may have come into contact with soil or plant material on both overseas and New Zealand orchards and farms. Growers need to make use of hand sanitiser.
* Implement a monitoring programme to keep an eye out for any suspected pests and diseases. A good monitoring strategy is essential for early detection of pests and disease symptoms and helps growers to minimise the spread and impact of them. The grower should monitor the orchard regularly and report suspicious findings to their manager or directly to Kiwifruit Vine Health or MPI and, if possible, photograph and/or collect samples.
* Develop a year-round protective spray plan using recommended products with different modes of action to maximise disease control. The grower should always use label rates to avoid the risk of product resistance or tolerance developing. Success of any spray programme is reliant on good spray coverage.

Economic.* The implementation of biosecurity measures such as monitoring, costs a grower a lot of money, however, if the orchard had a biosecurity breach, it will cost the grower much more in elimination and / or control of the pest or disease. If the breach is very serious, it could cost the grower their business, particularly if the plants are killed or the fruit cannot be exported.

All these strategies would be useful to ensure that Greenacre Kiwifruit Orchard is future proofing their kiwifruit businesses. However, the future proofing strategy that best meets the future needs of Greenacre Kiwifruit Orchard and that ensures long term viability is to implement a biosecurity orchard management plan. *The examples above are indicative samples only.* | The student comprehensively analyses future proofing strategies to ensure long term viability of a business.In their presentation, the student:* evaluates and justifies the best strategy that meets the future needs of the business and ensures long term viability.

**For example: (partial evidence)** In addition to the evidence for achieved and merit:The future proofing strategy that best meets the future needs of Greenacre Kiwifruit Orchard and ensures long term viability is to implement a biosecurity orchard management plan. Kiwifruit is New Zealand’s largest single horticultural export by volume and value, and exceeds $1 billion of exports. New Zealand growers produce 100 million trays for export from 11,250 productive hectares. A biosecurity orchard management plan meets the future needs of Greenacre Kiwifruit Orchard business as it will:* Ensure long term viability. It is about having a clear plan for managing biosecurity risks within an orchard. This is the grower taking all practical steps to reduce the likelihood of a biosecurity breach that could arrive, spread within or be spread from one orchard to another. It will minimise the impacts and protect the kiwifruit industry as well as the neighbouring orchards and community. The plan ensures New Zealand’s export markets have quality controls in place and are pest and disease free which enables us to continue to sell our kiwifruit overseas.
* To ensure the kiwifruit are safe by emphasising the use of non-chemical techniques to limit pests and diseases. A biosecurity orchard management plan must cover; hygiene, crop protection, monitoring, and orchard management. By ensuring all these aspects are undertaken means that non-chemical techniques are utilised first before having to resort to chemical practices.
* To minimise any adverse impacts on human health or the environment. By using non-chemical techniques first to mitigate pests and diseases, before resorting to chemical practices, ensures that there are minimal effects on human health or the environment. This is further managed by having an integrated pest management plan.
* Make a profit. Greenacre Kiwifruit Orchard produce kiwifruit to make a profit. By implementing a biosecurity orchard management plan ensures that there is a consistent and coordinated approach at national, regional and grower levels. Without this, a biosecurity breach would prove extremely difficult, if not impossible, to manage and control. If there was a biosecurity breach, there will be significant financial losses to the grower as well as the industry.

The use of this strategy will see Greenacre Kiwifruit Orchard continue to sell kiwifruit in the future. *The examples above are indicative samples only.* |

Final grades will be decided using professional judgement based on a holistic examination of the evidence provided against the criteria in the achievement standard.