Hort Innovation

Final Report

Food Safety and QA Risk Management

Project leader:

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Delivery partner:

Scheme Support Services Pty Ltd

Project code:

MU16000

Project:

Food Safety and QA Risk Management MU16000

Disclaimer:

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Content

General Project Overview

This project, focused on risk management for the Australian Mushroom Industry and offered both programmed and needs based activities in support of quality, food safety and broader aspects of both customer and legal compliance.

Throughout its three-year duration, the project aligned and linked closely to other mushroom industry projects including the Pest and Disease Management Service and the Mushroom Industry Reputation Risk Management Framework and associated works.

This project followed on from a previous 'Food Safety and QA Risk Management' initiative (2011-2017) funded directly by the AMGA as a service to members. It is hoped this important resource for industry will be continued through future projects.

Summary

The Australian mushroom industry has long recognised the importance of underpinning operational activity with strong foundations, based on accurate and relevant information. A well-established suite of projects has provided this resource and have underpinned industry needs in areas such as pest and disease management and research services (MU16003) and food safety and QA risk management (MU16000).

In a complex and ever-changing compliance landscape, this project (MU16000) has served to support industry in meeting both customer and legislative requirements.

This project has been delivered over a three-year period, with four key areas of focus and deliverables:

- Standards and Systems Awareness
  A comprehensive mushroom industry HACCP plan was developed in the late 1990s and has acted to underpin food safety certification for many growers over the past two decades. As the compliance requirements of the Australian market have become more complex, including requirements for the international benchmarking (GFSI) of existing standards, and the introduction of the Harmonised Australian Retailer Produce Scheme (HARPS), this project has acted to raise awareness and understanding, and to facilitate transition processes for the sector.
- Verification Frameworks and Mechanisms
  Independent and trusted verification mechanisms are essential in underpinning effective compliance systems. The Australian mushroom industry has a well-established verification testing service, supported by this project through advice, review and interpretation.
- Communication and Training
  Throughout the duration of the project, information has been communicated to industry through e-updates, Journal articles, workshops, conference presentations and direct contact.
- Strategic QA and Food Safety Research
  Many of the challenges facing Australian mushroom growers are common to industry participants in many other parts of the world; through collaboration and information sharing, this project has ensured relevant and current food safety and quality information is accessible to the Australian industry.

In addition to the core project activities, an industry support service formed a further core component of the project. Providing timely information and support to mushroom growers on request, identifying, managing and resolving food safety and quality issues impacting individual businesses, and acting to support and protect the wider industry reputation.

Methodology

This project, like its predecessor (AMGA Food Safety and QA Risk Management: 2011-2017) has required a very flexible and agile approach to ensure prompt and timely management of individual issues as they arise.

The effective 'triaging' of issues to determine the likely impact on individual businesses, the Australian mushroom industry and on the wider fresh produce industry, has been a core component throughout.

In addition, the '4 pillar' structure to the project has ensured regular and uniform activity and deliverables in a proactive and engaging format.

Outputs

Standards and Systems Awareness

Changes to the compliance landscape have continued throughout the three-year duration of the project. A key deliverable from the project has been information dissemination (direct email) and communications (e-news and Journal) re. current and future compliance requirements.

Copies of all articles have been provided in previous milestone reports, an article re. certification options and compliance with the requirements of the Harmonised Australian Retailer Produce Scheme (HARPS) published in the last 12 months of the project is provided in Appendix 1.0.

The launch of the Harmonised Australian Retailer Producer Scheme (HARPS) has continued to impact on tier 2 (indirect) mushroom growers, requiring a move from the AMGA HACCP program widely adopted by industry, to an approved HARPS base scheme such as Freshcare. Confusion arising from differing retailer perspectives re. HARPS implementation has and continues to require careful management in information updates.

Freshcare training and implementation support has been organised for numerous growers over the life of the project, several other mushroom businesses have successfully completed Freshcare eLearning and fully implemented the Freshcare system on farm.

With the release of Freshcare v4.1 (mandatory 01/01/2020) and subsequent update in late 2020 due to publication of revised GFSI Benchmark Criteria "Version 2020", ongoing support for transition and implementation is likely to be well received and will ensure ongoing strength in compliance systems reflecting on the industry as a whole.

Further follow-up activity from the mushroom grower QA survey completed in 2018 has acted to inform QA and compliance support strategies in 2019 and 2020. A detailed summary of the survey results was included in report MS103 - Appendix 3.0.

Verification Frameworks and mechanisms

The AMGA testing program continues to provide a service to industry in terms of both product and water microbial testing and chemical residue testing. Test kits are distributed from / returned to the laboratory.

Throughout the duration of the project, all test results were sent to the AMGA and then reviewed by Clare Hamilton-Bate prior to distribution back to farm; any detections resulting from the testing were further investigated as part of the project.

Though the activity of the project, advice was provided to growers re. the interpretation and review of detections within allowable limits and where appropriate improved practices to manage (allowable) detections.

There were no detections outside critical limits / legal MRLs in 2018/19 or 2019/20 YTD.

As part of the annual review of the testing and verification program, alternate testing providers were contacted on two occasions and quotations reviewed. Following both reviews it was agreed to continue with the current service provider (Symbio Laboratories).

A review of chemicals tested was also undertaken annually, in conjunction with the pest and disease management and research services project team (MU16003), to ensure a broad spectrum testing regime reflective of modern chemistry and usage patterns.

At the time of reporting, the testing service is used by less than 35% of mushroom growers, based on survey feedback and industry consultation. It is hoped with greater promotion and awareness, participation will increase as consolidated data on mushroom testing is a valuable tool to underpin industry crisis management.

Communication and Training

Information updates and articles on a broad range of compliance related topics have been provided to mushroom growers through the life of the project. The most recent articles are included in Appendix 1.0, all previous articles have been included in project milestone reports and are also accessible from the Journal directly.

Throughout the project, we have worked closely with the team at PorterNoveli, ensuring alignment of all crisis management activities. The 'Reputation Risk Management Framework' was an important output of this work. It continues to be reviewed and updated and will act to ensure mushroom growers are aware of all risks, understand appropriate risk management tools and resources, and are familiar with both communication strategies and support available support mechanisms.

To ensure industry members had access to up to date information on project activities and wider food safety issues at all times, a regular 'Risk Report' was provided for inclusion (as required) in AMGA Board papers and through other associated reporting paths.

Regular meetings with industry leaders have occurred face to face or by teleconference throughout the project.

Strategic QA and Food Safety Research

Regular updates on strategic issues have been included in reporting, with more detailed information provided as necessary.

Issues have included:

- Harmonised Australian Retailer Produce Standard (HARPS)
- Fresh Produce Safety Centre (FPSC)
- FSANZ fresh produce focus group / crisis management activities
- Food Safety outbreaks in fresh produce (worldwide)
- Use of Quaternary Ammonium Compounds in disinfect / sanitise process materials (ongoing review – confidential)
- Potential contamination of compost / mushrooms from contaminants in compost raw materials (ongoing review – confidential)

The June 2019 the mushroom industry submission to FSANZ re. regulation for high risk horticulture was developed through the resources and engaged expertise of this project. Appendix 2.0.

Over the extended period of this project (2011-2020), a strong collaborative network has been established, particularly in Europe, the UK and North America. Thus facilitating a flow of information and a sharing of resources in food safety, quality and wider compliance systems.

Industry support activities

As detailed in the project methodology, a core component of the project comprised the prompt and timely management of individual issues (food safety, quality and broader compliance) as they arose.

In addition, participation in strategic industry workshops, and collaborative cross-project activities, contributed significantly to the success of the project.

Participation in the Risk Management for the Mushroom Industry Strategic Review (2 day workshop - July 2019) and in the AMGA website design meeting – technical, QA and compliance focus (1 day workshop - Feb 2020) both occurred in the final reporting period of the project.

Outcomes

This project comprises both scheduled input to key activities and 'reactive' input as required to effectively manage risk for individual businesses and thus for the wider Australian Mushroom Industry.

Throughout the life of the project, both aspects delivered support to industry in accordance with the project plan.

Monitoring and evaluation

Throughout the life of the project, the level of mushroom business engagement has been informally monitored, through direct contact (email, phone) and through the AMGA General Manager and Committee feedback.

The project has been a unique combination of 'immediate' crisis management activity, longer term investigative activity and proactive industry communication. All three aspects have been well received and feedback has been positive.

The industry survey completed in 2018 and reported in MS103 -Appendix 3.0, provided a 'snap shot' of industry understanding and need, and formed a influential component of project activity in the final two years of the project.

Recommendations

The very nature of this project as a 'retained advisory and crisis management service' with core, underpinning foundations of information gathering, and dissemination makes it an unusual initiative to report on in the 'traditional' project outcomes format.

However, it is clear from feedback, both directly related to this three-year project and previously (2011-2017) related to the AMGA funded equivalent project, that there is a clear and valuable role for such an initiative to support Australian mushroom growers.

For a product with little direct differentiation between producers in the marketplace, the image and reputation of *agaricus* mushrooms is paramount. Quality or food safety issues affecting one mushroom producer will, more than many other sectors, impact all mushroom producers. Ensuring all mushroom growers are aware of both regulatory and market compliance requirements is critical to protect the industry as a whole.

It is strongly recommended that consideration is given to a similar service ongoing.

Specific initiatives that have been managed through this project include:

- Industry residue testing program (interface with P&D Management project)
- Collaborative information sharing – FS&Q – domestic and International
- Compliance support – FS&Q domestic market compliance
- Reputation Risk Management Framework (in association with PorterNovelli)
- Training and communication initiatives – internal / external
- Specific (**confidential**) research to support various FS&Q compliance in the mushroom industry.

Intellectual property, commercialization and confidentiality

No project IP, project outputs, commercialization or confidentiality issues to report

Appendices

Appendix 1.0 – Articles published in Journal 2019-20

Appendix 2.0 – Submission to FSANZ – June 2019

Appendix 1.0 – Articles published in the Journal 2019-20

Food Safety and Quality Certification Update – P52

Food Defence – are we prepared? – P54

FOOD SAFETY & QUALITY CERTIFICATION UPDATE

For those businesses certified to Freshcare please read the following information.

If your Freshcare on farm food safety and quality audit takes place in January or February 2020, you will need to be prepared and transitioned to FSQ4.1, as from the new year no audits to FSQ4 will take place.

Commence the transition process now, start by reviewing and updating your Freshcare documents and records to ensure you're adequately prepared.

Information to assist the transition to FSQ4.1 is available here: **https://www.freshcare.com.au/standards/fsq4-1**

If you have any questions regarding the transition to FSQ4.1, contact the Freshcare office at info@freshcare.com.au or 1300 853 508.

The transition from FSQ4 to FSQ4.1 is required for all audits from 1 January 2020.

Freshcare Standards that remain current from 1 January 2020 include:

- Freshcare Food Safety and Quality - Edition 4.1 (FSQ4.1).
- Freshcare Food Safety and Quality Supply Chain - Edition 1 (SC1).
- Freshcare Environmental - Edition 3 (ENV3).
- Freshcare Environmental Viticulture - Edition 2 (ENV-VIT2).
- Freshcare Environmental Winery - Edition 2 (ENV-WIN2).

From 1 January 2020 Freshcare Rules Version 4.3 - July 2019 are applicable to all current Freshcare Standards.

HARPS

Still unsure if your business needs the Harmonised Australian Retailer Produce Scheme (HARPS) in addition to your existing food safety and quality certification?

A decision graphic has been developed to assist suppliers in determining whether their business requires HARPS. The terminology in this graphic replaces the previous references to Direct and Indirect suppliers, and uses a tiering system to define supply chain responsibilities and actions required by suppliers.

The graphic can be seen below and downloaded at the following address: **https://harpsonline.com.au/wp-content/uploads/2018/09/2018-09-17-HARPS-Decision-Graphic-1.pdf**

Further information on HARPS and FAQs can be found at: **https://harpsonline.com.au/**

Hort Innovation Strategic levy investment | MUSHROOM FUND

This project has been funded by Hort Innovation using the mushroom research and development levy and funds from the Australian Government. For more information on the fund and strategic levy investment visit horticulture.com.au

HARPS Decision Graphic: Is **HARPS** required for my business?

v2.0 September 2018

HARPS is a retailer-led scheme designed to assist with compliance to food safety, legal and trade legislation for suppliers to the major grocery retailers in Australia

Tier 1	Tier 2	Tier 3	Out of Scope
Your business has a Vendor or Supplier Number to a HARPS Participating Retailer*.	**Your business packs or re-packs any of the following:** • Loose product with PLU/DataBar stickers applied as specified by a HARPS Participating Retailer*; • Retail-branded pre-packs; • Retail Returnable Plastic Crates (RPC's); • Proprietary-branded pre-packs; • Loose product in final retail packaging, packed to a retail specification destined for a HARPS Participating Retailer*; **OR** **Your business is an Approved Supplier** to a Tier 1 business, who supplies to a HARPS Participating Retailer* (in final retail packaging); **OR** **Your business provides Support Services^**	**Your business supplies bulk produce** (not in final retail packaging) for further packing to a Tier 1 or Tier 2 supplier; **OR** **Your business is a low volume producer** supplying a total of 10 pallets or less per calendar year, per site. This is a collective total across all HARPS Participating Retailers*. (NB: Suppliers of retail-branded pre-packs are excluded from this rule as they qualify as a Tier 1 or Tier 2 supplier).	**Your business processes fresh produce** (e.g. value-adding such as bagged salads, fresh cuts, sliced mushrooms/carrots, shelled nuts etc.). Your business requires food safety certification to a scheme as required by your retailer customer. **OR** **Your business is a virtual broker (agent or merchant)** that does not qualify as a Tier 1, 2 or 3 supplier (i.e. you do not physically handle the product).
Action Required	**Action Required**	**Action Required**	**Action Required**
Your business may require HARPS approval, this includes certification to an Approved Base Scheme** *and* the HARPS requirements by 1st January 2019. Contact your respective retailer customer(s) for further information. ✓ Base Scheme AND ✓ HARPS	Your business may require HARPS approval, this includes certification to an Approved Base Scheme** *and* the HARPS requirements by 1st January 2019. Contact your respective retailer customer(s) for further information. ✓ Base Scheme AND ✓ HARPS	Your business may be required to be certified to an Approved Base Scheme** by 1st January 2019. ✓ Base Scheme	No action required for HARPS. ✗ NO ACTION

*** HARPS Participating Retailer(s):** ALDI, Coles, Costco, Metcash (IGA), Woolworths

****Approved Base Schemes**: BRC, Freshcare, GLOBALG.A.P., SQF

^ Support Services: Services including ripening, brokerage activities (agent or merchant), storage and cooling (where product handling and traceability are the responsibility of the Support Service supplier).

HARPS

FOOD DEFENCE

Are We Prepared?

While risk factors impacting on supply chain efficiency are considered, supply chains are rarely designed in consideration of the tangible and intangible threats that impact on the integrity of supply itself.

Incidents such as the malicious tampering experienced by the Queensland Strawberry Industry in September 2018 present the stark reality of the need to think outside the box and to expect the unexpected.

No one could have predicted the impact of a single malicious act of food tampering on the very viability of an entire industry sector.

Never before had social media played such a pivotal role in the dissemination of information, initially to fuel the incident and latterly to assist in strategies for recovery.

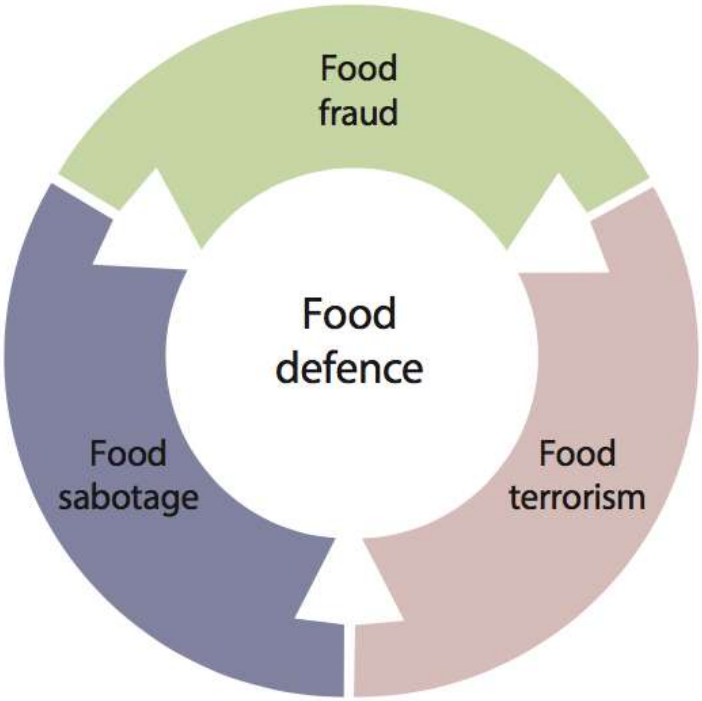
The lessons learned from the Queensland strawberry incident are many and varied, but the key message is clear – understand the issue, manage the risks, and be prepared.

'Food Defence' is most effectively used as an overarching term to describe and encompass all the activities carried out to protect food from threats. In simplest terms food defence can be considered to comprise of three distinct elements.

- Food fraud.
- Food sabotage.
- Food terrorism.

Having understood the elements of food defence, we also need to understand the potential perpetrators who might be motivated to carry out those threats.

They can be internal or external to the business, they can be acting in isolation, in groups and even with the knowledge of a business. We also need to understand their possible motivations.



THREAT - Deliberate act by someone to cause harm or for financial gain (Something that can cause loss or harm which arises from the ill-intent of people).

VULNERABILITY - How exposed the business is to the threat having an impact on the consumer.

FOOD FRAUD - The deliberate adulteration or misrepresentation of food, food ingredients or raw materials for financial gain.

FOOD SABOTAGE - The deliberate destruction, damage or disruption of food products or processes with the intention of causing reputational damage or financial loss.

FOOD TERRORISM - "An act or threat of deliberate contamination of food for human consumption with biological, chemical and physical agents or radio nuclear materials for the purpose of causing injury or death to civilian populations and/or disrupting social, economic or political stability" (WHO. Terrorist Threats to Food: Guidance for Establishing and Strengthening Prevention and Response Systems, Food Safety Issues, Revision May 2008).

TYPES OF PERPETRATOR - Workers, suppliers, contractors and outsiders, such as extremists or extortionists.

MOTIVATIONS - Personal grievances, pressure to achieve, financial gain, ideological, welfare causes - including fair work compliance.

With an understanding of 'what', 'who' and 'why' we can start to focus on actually identifying different types of threats, and assessing their relevance in our business.

IDENTIFICATION OF KNOWN AND PLAUSIBLE THREATS

A focus on known threats, either those that have occurred before, so history tells us that they could occur again; or threats that while not having occurred it is plausible to presume they could happen - e.g. foreign objects contamination, chemical contamination accidental and through known misuse.

IDENTIFICATION OF SUPPLY CHAIN THREATS

The identification of known and plausible threats, and threats from claims require consideration also be given to the entire supply chain to identify where such threats might occur outside the immediate control of the business- e.g. foreign objects contamination.

IDENTIFICATION OF THREATS FROM AT-RISK CLAIMS

The claims that are made about a product give the consumer an expectation about what they are purchasing, if that claim is not met or is disproven, then there is genuine potential for customer upset.

That response can be attributed to the product and to the company that produced it - e.g. provenance, variety, organic.

If a business can identify and define the threats in a consistent and repeatable way, then they are more likely to achieve an objective result in terms of quantifying and managing those threats.

To do this a business needs to consider:

- How the consumer could be impacted by the threat;
- The actual act and the threat itself; and
- The perpetrator and their motivation.

The impact is considered firstly on the 'asset' we are seeking to protect i.e. the consumer, then on the business - that secondary impact driven by the effect on the consumer.

Once the threat and its impact have been assessed, how susceptible the business is to an individual threat having an impact needs to be assessed, considering both motivation and likelihood of detection.

For a business to be vulnerable to a threat there has to be motivation for the perpetrator to cause harm or damage, and also the opportunity for them to actually carry out the act without detection.

Once threats and vulnerabilities are clearly defined, protection measures should be identified for each potential threat. Protection measures can be either controls or monitoring activities, aiming to prevent, detect or reduce the threat to an acceptable level.

Some very simple steps can take us a long way to gaining control, through both improved infrastructure and systems to monitor employee activity.

Physical - packing line CCTV (with clear notices), good site security.

Systems - formal team structure and accountability, team meetings, staff monitoring, independent mechanisms to report issues.

Effective systems can and will act to reduce threats and minimise vulnerabilities and, provide a strong foundation for crisis management.

But, like any defence system, it can't and won't be able to control everything, there will always be that 'unknown – unknown' the crisis you didn't see coming.

Effective crisis management strategies for a business, industry or sector need to be in place before that unknown hits.

The mushroom industry is well advanced in this respect, with initiatives like AMSAFE and the crisis management plans coordinated as a levy-funded project managed through Porter Novelli.

This article is based on the work of Adele Adams and Kassy Marsh (ref. *Assessing Threat Vulnerability for Food Defence: 2nd Edition 2018*)

ASSESSING THREAT VULNERABILITY FOR FOOD DEFENCE

Further information and insight on the topic of Food defence can be found at:

https://adeleadamsassociates.co.uk/food-defence-vaccp-taccp/what-is-food-defence/

Including a useful introductory video:

https://youtu.be/e-iSOeSWGQg

FURTHER INFORMATION:

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Appendix 2.0 – Submission to FSANZ – June 2019

Submission by Australian Mushroom Growers' Association (AMGA) to FSANZ

Review of Food Standards Code Chapters 3 and 4 – Food Safety Management Requirements

The Australian Mushroom Growers' Association (AMGA) welcomes the opportunity to provide a response to the FSANZ information paper circulated to industry in May 2019.

Background

The AMGA represents the 44 producers of *agaricus bisporus* mushrooms in Australia. Several members also produce exotic mushroom species.

In representing the interests of the Australian mushroom industry, the AMGA takes a broad view of who its stakeholders are, i.e. AMGA attempts to act for the benefit of the whole supply chain not just mushroom producers.

The activities undertaken by AMGA cover a range of issues and AMGA seeks to not only address producer needs, but also to ensure wholesalers, retailers and consumers can have confidence that mushrooms are a safe food of the highest quality.

The AMGA is committed to supporting its members in the development, implementation and ongoing management of their Food Safety Programs. The Association retains an experienced industry consultant to advise both the Association and members on issues relating to quality assurance, food safety and environmental assurance issues. This support role is key to the industries present position in supplying a safe quality product to the Australian market.

The majority of Australian mushroom growers supply product either through the Central Wholesale Markets in each State or, direct to the major retailers. For both market options a third party certified, HACCP based food safety system is a mandatory requirement, the costs associated with food safety compliance are significant.

Recognition of Existing Food Safety Systems

The AMGA believes it is essential that any legislation introduced builds on the compliance provided through existing food safety programs and, does not result in a duplication of system requirements for industry.

With the majority of AMGA members having a 3rd party certified, HACCP based food safety system in place, we would envisage that these systems would comply with the requirements of any regulations introduced by FSANZ, to manage food safety risk for fresh horticultural produce.

Summary

Given the critical importance of delivering safe, quality food to the consumer, the AMGA would support initiatives to encourage all producers of fresh horticultural produce to meet a minimum food safety standard, providing an effective industry wide mechanism for food safety risk management.

It may be that regulation is an option to force the late adopters to comply and implement on-farm food safety systems. However, regulation would only be supported if it imposed no additional cost on those growers who already demonstrate compliance through the market driven food safety systems.

However, growers with established food safety systems should not be further penalised nor incur any additional costs, in order to enforce the compliance of others.

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