
Session 10

Microbiology, Food Safety, Quarantine, and Regulatory Aspects

Australia's Grains Farm Biosecurity Program – a national initiative in plant biosecurity awareness, education and best management practice.

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Abstract

Sound biosecurity systems contribute to achieving sustainable agricultural and environmental systems, reducing the threat of introducing unwanted pests and supporting food safety and product integrity. Within Australia, the Grains Farm Biosecurity Program (GFBP) is a national initiative to assist in the development and implementation of improved biosecurity practice within its grain industry. Initiated in 2007, the extension focused program contributes to the industry's risk mitigation activities, supports continued market access and promotes a partnership approach involving governments, industry and community. The program is funded through grower levies in partnership with state government agencies and Plant Health Australia.

Using a variety of community engagement strategies, the GFBP has developed a wide range of tools to improve the management of and preparedness for, biosecurity risks in the Australian grains industry at the farm and industry level by highlighting risk pathways and activities throughout the supply chain and encouraging adoption of practices and strategies to mitigate risks. The GFBP also promotes and conducts surveillance for high priority pests especially in on-farm storage. Evaluations indicate an increased awareness of biosecurity risks, industry capacity and voluntary adoption of biosecurity best practices throughout the sector.

The GFBP focus on biosecurity best practice through industry engagement has seen it contribute to safeguarding and maintaining Australia's export reputation, with the program recently winning a national biosecurity award.

Keywords: Grains biosecurity, farm biosecurity, market access, Grains Farm Biosecurity Program, industry engagement

1. Introduction

The Grains Farm Biosecurity Program (GFBP), initiated in 2007, contributes to the Australian grains industry's risk mitigation activities, and promotes a shared responsibility involving governments, industry and community. The program aims to promote and improve the management of, and preparedness for, biosecurity risks in the grains industry at the farm and industry level.

Australia's geographical isolation and strong biosecurity system has ensured that many overseas pests of crop production and post-harvest storage are not present in Australia. Freedom from exotic plant pests provides both a yield advantage as well as market access benefits (especially in relation

to stored product pests such as khapra beetle) for Australian crop production industries such as grains.

Along with exotic pests, endemic pests can also impact upon production and market access. There is a nil tolerance for live insects in delivered grain in Australia, and with increasing on farm storage, prevention and control of stored grain pests is a critical function undertaken by growers. Management of stored grain pests is just one example of how farm biosecurity and hygiene practices are a key component of integrated pest management and form a vital role in minimising the establishment and contamination of pests in stored grain.

Importantly, national and state biosecurity systems are complemented and supported by measures carried out at the industry and regional level. As risks of new pests entering Australia can never be totally eliminated, industry biosecurity is regarded as a shared responsibility where all links in the production and supply chain engage and take responsibility for minimising biosecurity risks that are within their control. Growers implementing farm biosecurity practices, agronomists, researchers and other service providers including contractors can all play an important role in safeguarding the industry at a farm, regional and national level. An aware and trained grains industry has the capacity to minimise the risks posed by new and established pests, and respond effectively to any pest threats that would impact on the future sustainability and viability of the industry (Taylor-Hukins et al. 2015).

2. Materials and Methods

The GFBP has appointed specialised Grains Biosecurity Officers in five key grain growing states of Australia. The program is funded by Grain Producers Australia through grower levies in partnership with state government agencies, and is managed by Plant Health Australia (Bellati et al. 2015).

Yearly, over 100 activities are undertaken using a variety of community engagement strategies. The GFBP has developed a wide range of tools to improve the management of, and preparedness for, biosecurity risks in the Australian grains industry throughout the supply chain.

Core activities undertaken by the Grains Biosecurity Officers include:

- education and training to increase awareness of high priority exotic pests
- facilitating surveillance of high priority exotic pests for early detection and proof of absence
- development of practical resources and training materials
- demonstrating simple and effective methods for implementing farm biosecurity
- building collaborative networks and alliances across industry
- promotion of industry advocates
- emergency response and preparedness

3. Results and Discussion

Monitoring throughout the program indicates an increased awareness of biosecurity risks and voluntary adoption of biosecurity best practices throughout the sector. Table 1 provides a snapshot of results from surveys conducted by the Farm Biosecurity Program (initiative of Animal Health Australia and Plant Health Australia) between 2010 and 2017, measuring the percentage of respondents (grain producers) implementing suggested biosecurity practices. A general trend of uptake can be observed, with particular mention to monitoring stored products.

The national GFBP has aligned key awareness messages and education objectives to current grains industry extension programs, in order to deliver grains biosecurity training and education seamlessly. A critical element to the success of these strategic alliances is value adding to existing program content, where biosecurity messages and exotic pest identification information is embedded within industry training programs such as Pulse Australia best management practice accredited workshops (Bellati et al. 2010). This continues to be a strength of the program, with new linkages and alliances formed in particular for surveillance.

Tab. 1 An extract from surveys conducted by the Farm Biosecurity Program measuring practice change within the grains industry at the farm level

Practice	2010	2013	2017
Keep records	59%	82%	89%
Monitor stored products	52%	80%	93%
Clean machinery/equipment coming in property	57%	73%	81%
Control visitor movement on property	34%	47%	54%
Report anything unusual	31%	42%	49%

The latest initiative from the program is a pilot Sentinel Silo project, using both targeted and general surveillance to monitor grain storages, 'ag pantries' and other risk sites and pathways for exotic stored product pests. The surveillance is aimed at strengthening evidence of absence, improving industry participation and knowledge of stored grain pests and surveillance and promoting best management practices.

4. Conclusion

The GFBP is Australia's flagship program for promoting farm biosecurity, with its success encouraging other industries to implement similar extension programs. The focus on biosecurity best practice through industry engagement has seen the GFBP contribute to the safeguarding of grains production and helping to maintain Australia's grain export reputation.

The GFBP is celebrating 10 years of success raising awareness of biosecurity among grain growers and helping the industry respond to serious pest incursions. In March 2018, the program was awarded an Australian Biosecurity Award for its ongoing contribution to Australia's biosecurity integrity.

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References

- BELLATI, J., SHERRIFF, L., BURRILL, P., MORAN, J., TAYLOR, S., SLATTERY, J. AND S. DIBLEY, 2010: Grains biosecurity aligns with dynamic communication and adoption industry programs for on-farm impact. Global Biosecurity Conference: safeguarding agriculture and the environment 2010, Brisbane Australia.
- BELLATI, J., MCINTYRE, K., TAYLOR, R., BURGESS, R., RUSSELL, J., MORAN, J., ROSSITER, L., TAYLOR, S. AND A. SAUNDERS, 2015. Australia's Grains Farm Biosecurity Program – a national initiative in plant biosecurity awareness, education and training. International Plant Protection Congress 2015, Berlin Germany.
- TAYLOR-HUKINS, R., BELLATI, J., MCINTYRE, K. AND R. BURGESS, 2015: Exotic plant pests – a threat to the sustainability of Australia's grains industry. Australian Agronomy Conference 2015, Hobart Australia.
- KG2, 2017: Farm Biosecurity Research Report, <http://www.farmbiosecurity.com.au/wp-content/uploads/2017-Producer-survey-results-summary.pdf>

A commercial method of controlling bedbugs (*Cimex lectularius*) using CO₂ in dwellings

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Abstract

As a result of withdrawing residual insecticides such as organophosphates and carbamates throughout the world, infestation in *Cimex lectularius* has been dramatically increased in recent years. The ability of this pest to