

NURSERY PAPERS

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A Systems Approach to Managing Pests, Diseases & Weeds BioSecure HACCP

On Monday 21 October 2013 the testing of BioSecure HACCP to meet interstate market access requirements began with a trial between Queensland and Victoria. The BioSecure HACCP trial ran through until 21 April 2014 overseen by Nursery & Garden Industry Queensland, Nursery & Garden Industry Victoria, as well as the biosecurity agencies of Queensland and Victoria. This world leading holistic on-farm biosecurity program delivers a structured on-farm pest, disease and weed management system that has shown it can be used to support interstate market access. In this month's Nursery Paper John McDonald, Industry Development Manager Queensland, gives an account of the trial and records grower feedback on the value of the program.

A Systems Approach to Managing Pests, Diseases & Weeds, BioSecure HACCP

Biosecurity is not just dealing with quarantine pests; it is the protection of a plant production system from the introduction of insects, diseases, weeds and other biological organisms that may adversely impact upon the cropping system. Producers (growers) are in constant battle to grow their crops with as little damage from plant pests as possible, achieving this through exclusion, eradication and/or management. With the integration of various strategies (e.g. protected structures, hygiene, use of beneficials, monitoring, chemical, etc) most producers get their crop(s) to market. However by structuring the entire process around standardised procedures, best management practice and skilled staff this integrated cropping system can benefit downstream from the farm gate through improved **market access**.

BioSecure HACCP is the industry specific biosecurity program designed to assist producers in their on-farm pest, disease and weed management through a systems approach supported by procedures and documentation. The program applies the 12 defining principles of Hazard Analysis Critical Control Point (HACCP) to the management of biosecurity risks at farm level (production nursery) providing a creditable risk identification and management process for growers. Having a clearly defined pest, disease and weed management system operating under best management practice guidelines, which is risk specific and supported by concise and accurate records, underpins the value of pest management and should be recognised by customers and regulators.

The trial was a national industry initiative supported by state, territory and national peak industry bodies as well as the biosecurity agencies across all Australian jurisdictions recognising the two businesses in both Queensland and Victoria which were



Pohlmans Nursery

testing on behalf of the industry. BioSecure HACCP is the first industry developed on-farm biosecurity program in Australia to be used as a legally approved market access instrument allowing the four production nurseries to trade with their clients during the trial phase. It is expected that at the completion of the trial audit report the other states and territories will phase in the adoption and recognition of BioSecure HACCP.

It has taken more than 5 years of interstate negotiations and industry program development to get to this point with industry R&D investment running at more than \$400 000 to date. Costs

associated with interstate market access are constantly increasing with some businesses having annual bills above \$100 000. Added to the dynamic markets growers are operating within it is imperative that an interstate market access system is available which offers recognition of on-farm best management practice and grower skills, is flexible for growers, utilises technology and is cost effective.



Birdwood Nursery

The trial of BioSecure HACCP included two certified production nurseries from Queensland (Birdwood Nursery & Pohlman's Nursery) and two from Victoria (Mansfield's Propagation Nursery & Proteaflora Nursery) trading with their clients in the two respective states. Trial oversight was provided by the Project Control Board (PCB) that consisted of representatives from Plant Health Australia, Biosecurity Queensland, New South Wales Biosecurity, Victoria Plant Biosecurity & Product Integrity, Biosecurity South Australia and NGIA. Operational management was through NGIQ and NGIV with support from each biosecurity agency in the respective states (Qld & Vic) provided to ensure the trial met all legal requirements.

General Manager of Pohlman's Nursery Mr. Robert Pohlman said "Industry on-farm programs offer opportunities for self certification, under a biosecurity program like BioSecure HACCP, to assess plant stock and implement management programs to ensure crops are pest, disease and weed free and are maintained as per the intra and interstate movement and import regulations".

The BioSecure HACCP trial is based on the industry developed on-farm biosecurity program being tested to assess its ability to meet the interstate market access requirements for nursery stock of Queensland and Victoria. Each of the four production nurseries (two in each of two states) operated their interstate trade under robust on-farm plant pest, disease and weed management procedures. The on-farm BioSecure HACCP procedures are supported by pest specific **Entry Condition Compliance Procedures (ECCP's)** and, in an Australian first, a web based electronic biosecurity verification and certification system supervised by regulatory agencies in both jurisdictions.

Each business first had to gain BioSecure HACCP Certification available to NIASA Best Management Practice (BMP) Accredited businesses because many of the NIASA BMP activities underpin good biosecurity practice. Through the implementation and adoption of the procedures and record keeping in the BioSecure HACCP manual the growers developed their biosecurity program and incorporated it into the overall cropping system. Key procedures implemented include:

Table 1. Examples of BioSecure HACCP Procedures

Disinfesting plant containers	Vehicle inspection	Crop monitoring
Growing media storage	Monitoring plant growth	Site surveillance
Growing media production	Cleaning & Disinfestation	Despatch inspection

Each procedure is aligned to a relevant record and completion, access for audits and secure record storage are mandatory requirements under the BioSecure HACCP program. Some records are only completed once (e.g. Approved supplier register) and updated if the situation changes whereas other records are at least weekly (e.g. crop monitoring at no more than 7 day intervals) and are used to drive internal decision making plus demonstrate that an activity has occurred. Table 2 gives some examples of required records:

Table 2. Examples of BioSecure HACCP Records

Approved supplier register	Register of Authorised Inspection Person	Visitor record
Materials import inspection	Materials despatch inspection	Vehicle inspection
Corrective action report	Register of Certification Signatory(s)	Crop monitoring



Proteaflora Nursery

Mr. Rob Furniss, Proteaflora Nursery Production Manager, has said of BioSecure HACCP "The great thing about the BioSecure HACCP program is that it is not just about the quality measure at the end of the line, rather it is a program that when implemented will ensure that quality is achieved at each stage of the process. By identifying the critical control points in our plant production and implementing management strategies to mitigate issues before they arise we have further developed our production and reporting processes. In turn this has strengthened our already successful continuous improvement program as it has provided focus and a



Audit Management System (AMS)

program that encapsulates all facets of quality control.

Throughout the trial and into May 2014 there have been a total of 79 BioSecure HACCP Biosecurity Certificates (BHBC) issued with 46 being from the two Queensland growers sending into Victoria and 33 from the two Victorian growers sending into Queensland. Each BHBC is an electronic document generated within each growers secure account in the web based biosecurity verification and certification system (**Audit Management System (AMS)**) specific to BioSecure HACCP Certified producers. Staff underwent specific training to meet the BioSecure HACCP requirements to be an "Authorised Person" under the approved ECCP. Initially the training was a face to face workshop delivered by the state NGI however during the trial this material was converted (NGIA) into a web based eLearning course with assessable criteria built into it and automatic notification making the process easy to access, very flexible in delivery and cost effective.

The electronic BioSecure HACCP Audit Management System (AMS) allows the certified production nurseries to manage their biosecurity processes in an efficient and practical manner with

all relevant records being stored and retrieved electronically. The businesses complete paper based or electronic records such as monitoring, surveillance, inspection etc. during the normal course of activities across the production system. At nominated intervals (e.g. weekly, monthly, etc) the paper records are scanned and uploaded to the AMS. The AMS also provides the business with the capacity to store client details for automatic insertion into the BioSecure HACCP Biosecurity Certificate (BHBC) template which is the replacement to the government paper based plant health assurance certificate. The BHBC is saved automatically within the AMS and can be printed or emailed to clients or government regulators as required therefore avoiding the current national paper



Mansfield's Propagation Nursery

based system and the associated administration costs.

The benefits of an on-farm biosecurity program gaining legal status for interstate market access are multiple and across all stakeholders including government and industry alike. Producers benefit from a system developed for industry, by industry, that integrates all plant health issues into a farm management system that addresses both endemic and exotic plant pest threats and risk mitigation.

In April 2014 the national Sub-committee on Domestic Quarantine & Market Access (SDQMA) met in Brisbane to address a range of interstate market issues including BioSecure HACCP. On the 30th April, at the invitation of NGIQ and Robert Pohlman, the committee visited Pohlman's Nursery to gain firsthand experience on the application of an on-farm biosecurity program. Growing & Production Manager at Pohlman's Nursery, Mr. Chris Johnson, has been one of the leaders in the implementation of BioSecure HACCP across the production nursery and addressed the SDQMA informing them how he has found that even before using the system to trade interstate the program is delivering benefits on-farm.

Chris went on to explain to the SDQMA how the BioSecure HACCP system allows the business to proactively drill down and look at each step within the plant production process and critically assess how the crops in each of the five cropping systems are produced. Having access to documented BioSecure HACCP procedures



Sub-committee on Domestic Quarantine & Market Access at Pohlman's Nursery 2014

and integrating these into normal work instructions provides rigor around key activities such as crop monitoring, site surveillance, despatch inspections, etc. This enhances their effectiveness and traceability is provided through clear and concise record keeping.

Pohlman's Nursery has found strategic and organised pest and disease crop monitoring is delivering significant rewards to areas of the cropping system that traditionally face cyclic pest pressures that have historically required remedial pesticide management which is costly and labour intensive. The crop monitoring has seen pesticide applications drop by 90% as it becomes localised, target specific with less repetition due to low pest pressure. Crops are improving in quality, throw-out rates

are reducing and turnover is increasing with one significant cropping system increasing turnover by more than 60% in 18 months. In summing up the BioSecure HACCP program Rob Furniss of Proteaflora Nursery said "The implementation program appears to be a lot of work, but in essence it is a set of checks and balances and verification of processes that are happening, or if not should be happening, as a part of any efficient production system. The verification is important, not just to be recognised by external auditors, but for my own confidence as a nursery manager to know that what we plan to do, we do it and we do it well. We hope that when the program moves past its trial phase and is implemented nationally it will provide us with a system that will either improve or even increase market access, something

that as a national brand and international supplier is critical to our growth."

The trial of BioSecure HACCP has shown there are major cost savings in labour, cropping inputs and efficiency gains in administration that support the value of the program. Government benefits through a greater engagement by and with industry in managing biosecurity threats, improved efficiency in technology adoption and auditing, real time information access and traceability of produce. The trial has been an overwhelming success with the next phase developing a full report on the trial being tabled at the next national Sub-committee on Domestic Quarantine & Market Access (SDQMA) meeting leading to national adoption.