

NURSERY PAPERS

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How to reduce pest and disease pathways into your nursery

Pest pathways

Plant pests are an everyday part of running a plant production nursery. Even the most careful grower can experience an incursion. Managing pathways into to your business is more important than ever with Australia experiencing more and more biosecurity threats each year.

SO HOW DO PESTS GET IN?

There are many ways plant pests and diseases can enter your nursery – some are obvious, and some not so clear.

REPORTING EMERGENCY PLANT PESTS

Most of the time pathogen and pest threats are familiar and managing them is straightforward. Every now and then, though, we find something we haven't encountered before. This may be an emergency plant pest (EPP), sometimes called an 'exotic' pest.

A plant pest is considered an EPP when it is a:

- pest seen overseas but not previously in Australia
- variant of an Australian pest
- new or unknown pest
- pest in Australia that's being officially controlled to minimise spread and manage impacts.

When an EPP comes into your production space there can be

serious repercussions for your business, so it's important to be aware of and plan for this.

If you detect an EPP on your site, you need to let the state biosecurity regulator know.

The regulator will close and quarantine your business, which means you can't trade.

Despite these consequences, it's important to report the pest. If you don't notify the state regulator, once the infestation has been identified elsewhere, the pest will be tracked and traced back to your site – and the clean-up will be much larger because of the unmitigated spread. This means your business may be closed for much longer than if you raised the alarm early.

IMPLEMENTING A BIOSECURITY SYSTEM

Implementing a biosecurity system for your business not only supports the production of high health, superior quality plants,

but also ensures you can identify and eradicate any pest or disease with the potential to damage your business.

Biosecurity is an emerging priority in Australian businesses. Your 'general biosecurity duty' or 'general biosecurity obligation' can be challenging to navigate because:

- it's a new concept
- threats to biosecurity differ from state to state
- laws and market access requirements also vary between states.

However, you can initiate a biosecurity plan for your business to ensure early detection of any hard-to-eradicate pest like western flower thrips or an emergency plant pest. This means implementing a business system based on sound biosecurity principles. The key steps are:

- identifying entry pathways that pose a risk to your business
- implementing procedures to mitigate the risks
- recording the measures you have taken
- monitoring how effective your actions are
- showing evidence of the system that is place.

These are the basics for implementing a biosecurity system to produce high health plants in your business.



Identifying pest and disease entry pathways

Identifying the entry pathways into your nursery is the crucial first step of a biosecurity system. While the types of pathways are similar for all production businesses, the risk levels vary from business to business, depending on production systems and products. It's important to consider the risks specific to your nursery.

TOP FIVE ENTRY PATHWAYS AND HOW TO MITIGATE THEIR RISKS

ENTRY PATHWAY 1: PROPAGATIVE MATERIAL, SUCH AS CUTTINGS, VEGETATIVE MATERIAL, SEED AND PLUG PLANTS

Mitigate entry via propagative material by:

- purchasing material from an accredited supplier
- designating a well-lit quarantine space away from all other plant material, so you can inspect the material for signs of pests or disease
- inspecting all material coming into the production space by carefully checking a representative sample of the stock and recording your findings for evidence during supplier negotiations or trace problems back to the source
- quarantining and treating any plants that will pose no further risk in the production space after treatment – record the treatment and its effectiveness
- bagging and binning or bagging and returning to the supplier any material that has pests or disease which pose an unacceptable risk to your business
- taking the three key steps if you detect an emergency plant pest (these are outlined below).

ENTRY PATHWAY 2: TOOLS, EQUIPMENT, MACHINERY AND VEHICLES

Mitigate entry via tools and equipment and machinery by:

- designating tools for individual production spaces – for example, have separate tools for propagation areas, grafting areas and despatch areas
- cleaning residue from all tools and then applying disinfectant to them between batches
- designating machinery and vehicles for specific locations in the business
- pressure washing and disinfecting between batches – inspect, pressure wash and disinfect any vehicle or machinery that comes on to the site and limit traffic through the production space.

FREE DIAGNOSTIC TESTING

Production nurseries receive free diagnostics for pests and disease through Grow Help. To contact Grow Help and for instructions on sample submission, visit: www.business.qld.gov.au/industries/farms-fishing-forestry/agriculture/crops/test/grow-help-australia

ENTRY PATHWAY 3: PEOPLE, CLOTHES AND FOOTWEAR

Mitigate entry via people, clothes and footwear by:

- limiting entry – use signage and barriers to keep outsiders from entering the production space
- using movement controls – maintain plants with a high risk of pests and disease at different times from plants with a lower susceptibility to avoid cross contamination
- wearing clean clothes and footwear to work
- being aware of contact with plant pathogens to avoid moving these on your hands, feet and clothing
- washing your hands or using an antibacterial hand gel between handling batches of plants, or using disposable gloves (and disposing of these between batches)
- (where soil borne pathogens are a risk to the crop) cleaning dirt and mud from boots before entry and using footbaths, particularly if crops are located on ground level beds.

EMERGENCY PLANT PEST DETECTION – THREE STEPS TO TAKE

If you detect an EPP:

- i. call the exotic plant pest hotline on **1800 084 881**
- ii. if possible, bag all affected plants and quarantine the area the plants have occupied from staff or plant movement – anyone who has handled the infested material should perform basic hygiene measures, such as washing their hands and cleaning their boots
- iii. if instructed, send samples to Grow Help for diagnostic testing.

VISITORS

**PLEASE RESPECT
FARM BIOSECURITY**

Please phone or visit the house before entering.

Do not enter property without prior approval.
Keep to roadways and laneways.



Plant biosecurity signage available for download through [PHA](#)



Plants on benches in shadehouse with gravel flooring

ENTRY PATHWAY 4: BENCHES, BEDS, USED POTS AND WORKING SURFACES

Mitigate entry via benches, beds and working surfaces by:

- cleaning benches, growing beds and other working surfaces – remove debris and spray with disinfectant between batches/jobs, and bin debris in the general waste or a composting pile
- displaying cleaning procedures and checklists for work surfaces, such as propagation benches, to ensure staff know to clean between batches and at the end of the day
- pressure washing and applying quats or copper to growing beds when beds are empty between batches
- cleaning used pots before reuse.

CLEANING POTS

If you don't clean them properly before reusing them, used pots pose a significant pathogen infection risk.

The best way to clean pots is to steam pasteurise them at 60°C for 30 minutes. Cleaning with quats or other disinfectant is less effective and poses a higher risk of contamination because the tiniest amount of media remaining in the pot can carry multiple microscopic pathogens.



Blue and yellow sticky traps from bugs for bugs

ENTRY PATHWAY 5: WIND, SOIL, WATER AND GROWING MEDIA

Mitigate entry via wind, soil, water and in growing media by:

- disinfecting irrigation water sources with a method that has demonstrated effectiveness in controlling plant pathogens, such as *Phytophthora* and *Pythium* spp – effective treatments include chlorine, UV and reverse osmosis
- purchasing growing media from a Nursery Industry Accreditation Standard Australia (NIASA)-accredited media producer – NIASA-accredited producers are independently audited to ensure their media production practices prevent the distribution of harmful pathogens
- installing wind breaks, implementing regular recorded crop inspections and using sticky traps that alert you to the presence of pests and disease early – this will allow you to spot spray, saving time and money on blanket spraying regularly (say, once a month)
 - » surveying the site and surrounding gardens for pests and weeds
 - » removing or spraying weeds in surrounding areas
 - » recording this activity
 - » drafting and implementing a [weed management plan](#)
- constructing ground level growing beds to ensure plants don't contact the soil or soil water – this means ensuring effective drainage to the whole site, preparing beds with plastic lining and a minimum of 75mm deep 10-25mm gravel to prevent dirt splash into pots
- growing inside protected structures to limit the entry of pests and diseases
- ensuring pathways are sealed to prevent pathogen-carrying dust from settling on plants.



Ready for a biosecurity plan?

GIA can help!



- Contact the GIA **Extension Officer** in your state for an in-person assessment and planning assistance – this service is free for levy payers.
- Consult the:
 - » **Pest ID** tool to identify pests, diseases, weeds and beneficial organisms
 - » **Australian Plant Production** website for industry resources on plant production, including integrated pest management plans and contingency plans for pest incursions.
- Look for the BioSecure HACCP logo to identify producers that have been independently audited for having an high health plant production facility.



MORE INFORMATION

Download past nursery papers from the Greenlife Industry Australia website at www.greenlifeindustry.com.au/communications-centre?category=nursery-papers