NSW GOVERNMENT | Department of Primary Industries

Farm biosecurity planner

For blueberries and other berry industries

Australian Blueberry Growers' Association

www.dpi.nsw.gov.au

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More information

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Plant Biosecurity and Product Integrity

www.dpi.nsw.gov.au

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The Australian blueberry industry is one of the most premium blueberry industries in the world. Good biosecurity practices are a simple way to protect ourselves from new pests and maintain our reputation in global markets.

Your General Biosecurity Duty or General Biosecurity Obligation

New legislation under both the *NSW Biosecurity Act 2015* and *QLD Biosecurity Act 2014* has introduced clauses to support biosecurity management as a shared responsibility. If you are a berry grower in QLD or NSW you have a responsibility to protect your industry from biosecurity risks you may come across in your day to day activities.

In NSW the **General Biosecurity Duty** provides that as far as is reasonably practicable, biosecurity risks encountered are prevented, eliminated or minimised.

In QLD the **General Biosecurity Obligation** means that everyone is responsible for managing biosecurity risks under their control.

The introduction of this legislation in both states makes it more important than ever to be aware of the biosecurity risks relevant to you and your property and that you do your best to mitigate these risks.

For further information on your General Biosecurity Duty or Obligation please refer to your relevant State Government Department website.

In other states where a General Biosecurity Duty or Obligation is not in effect this principle should still be followed for a unified industry approach to guard against biosecurity risks and protect your individual regions.

The Australian blueberry industry is one of the most premium blueberry industries in the world. Good biosecurity practices are a simple way to protect ourselves from new pests and maintain our reputation in global markets.

Preparing an on farm biosecurity plan

The best defence against pests, diseases and weeds on your farm is to implement sound biosecurity practices. Quick and simple measures can easily be built into everyday practices that will help protect your farm and your future.

The purpose of this farm biosecurity planner is to help you identify the biosecurity risks on your farm and provide guidance on how to address them. By developing an action plan you will be able to identify and prioritise biosecurity practices relevant to your property.

When devising a plan for your farm, the biosecurity essentials are a good place to start. The essentials are:

» Farm inputs
» Farm outputs
» People, vehicles and equipment
» Production practices
» Weeds
» Train, plan & record

The actual management practices you choose to use will vary depending on the parameters of your property(s). Good practices do not need to be expensive, but they do need to be easy to follow. Initially they may take up a little of your time, but will become habit in time and are invaluable in the face of a biosecurity event.

If you build your plan around daily, monthly or yearly farm routines, then biosecurity should become a regular habit.

After you have ranked your priorities, think about which ones you can achieve in the short and long term. Go back to the plan periodically and check progress towards your goals.

As a guide, short-term activities can:

» be planned and implemented within 12 months
» help your business comply with regulatory requirements
» be financially feasible in the short-term
» fit in with the time commitments of your enterprise

Long-term activities:

» are planned and implemented over more than one year
» need additional financial or personnel resources that are not currently available
» enhance the overall quality of service, aesthetics or administrative procedures

Property map

It can be helpful to have a map of your property to help identify key features to factor into your planned biosecurity practices, such as:

» known pest, disease or weed problem areas
» entry and exit points
» main roadways or parking areas and how close they are to production areas
» considering the best places to locate biosecurity zones, wash stations or 'check points'

How to use this action planner

Risks identified in this planner and their associated actions are comprehensive suggestions covering a variety of scenarios. **It is unlikely that all actions in this planner will apply to your property.**

Go through the action planner and identify which risks are applicable to you and your property. Think about the suggested actions as examples to then develop your own personalised actions best suited to your property.

Risk assessment matrix

Use this risk assessment matrix to determine the level of risk an activity is likely to pose to your property and production. The risk assessment can be helpful in prioritising which biosecurity practices to implement first.

		Likelihood of occurrence		
		Unlikely Could happen sometimes	**Likely** Could happen most times	**Very likely** Could happen every time
Impact to property, production and/or surrounding area if occurs	**Minor** May have little impact	Low risk	Medium risk	Medium risk
	Moderate Will have some impact	Low risk	Medium risk	High risk
	Major Will have great impact	Medium risk	High risk	High risk

Source: modified from 'Keep it Clean- Reducing costs and losses in the management of pests and diseases in greenhouse', NSW DPI

Image: (left) Anna King, nwnewsnetwork.org; (right) Catherine Van Bergen, weekendnotes.com

Farm inputs

Almost anything moved onto your property can be a potential source of plant pests, diseases or weed seeds. Monitor plant materials that enter the property as well as water sources and fertiliser.

Farm inputs	Potential risk	Actions to reduce risk	Action(s) to take ✓✗
New plants or propagation material			
 Image: Bill Cline, NCSU Department of Plant Pathology, ncblueberryjournal.blogspot.com.au	New plants and propagation material introduced to your property could be carrying unwanted diseases and pests.	Make sure plant material is sourced from a reputable supplier, preferably with a health status guarantee. Isolate new plant material away from healthy plants for a few weeks until you are sure they are pest and disease free. Regularly check newly planted cuttings for signs of pests and diseases and treat before they become established.	❑
Water sources			
	Water is a potential carrier of unwanted pests; it can carry weed seeds and soil or water borne pests such as fungi or bacteria. Many pest and disease causing organisms can survive for a long time in water sources until they find a host.	Inspect water inlets and storages for rubbish, weeds or pests that could cause contamination. Consider implications of recycled water. Prevent algal blooms by aerating or treating water that is stored in dams and is high in nutrients.	❑
Fertiliser			
 Image: National Centre for Families Learning, wonderopolis.org	Organic fertilisers can be sources of weeds, pests and diseases if not composted thoroughly.	Ensure that organic fertilisers comply with AS 4454 standards and are thoroughly composted to destroy weed seeds, pests and disease organisms. Maintain a record of the source of organic fertilisers, the application dates and where applied.	❑
Hives			
	Bees from wild and managed hives can act as vectors for the spread of pests and diseases. Honey bees themselves are also at risk of exotic pests and diseases of bees.	Ask where hired bee hives have been prior to your property. If you keep your own bees check their health regularly. Abandoned or neglected hives should be reported to NSW Department of Primary Industries.	❑

Farm outputs

Responsibility for biosecurity doesn't end when your berries leave the farm gate. The biosecurity measures you put in place support not only protection of your own property, but also support biosecurity in your region.

Farm outputs	Potential risk	Actions to reduce risk	Action(s) to take ✓✗
Moving plant products off the property			Image: Tricia, www.littleecofootprints.com
	Parts of plants separated from the crop can still spread diseases and pests from your property and threaten the region.	Ensure that plant products are free of pests and disease, your records are up to date and that the transport vehicle is cleaned down before and after transportation. Provide copies of supporting paperwork such as Interstate Certification Assurances where required.	❑
Product packing			Image: crbellette (6360), www.videoblocks.com
	Soil and plant material adhering to harvested crops can carry insect pests and disease organisms. If this product is transported to a new region without proper precautions there is a risk of pest and disease spread.	Remove as much excess plant material as possible from harvested crops. Minimise post-harvest contamination. Only potable water should be used for washing produce as part of packaging operations. A 'spray diary' record should accompany each consignment.	❑
Product transport			Image: colintedford.com
	Transport vehicles and containers can contain chemical residues or transfer insect pests, diseases and weed seeds. Contamination may result where containers have not been adequately cleaned out after carrying another commodity such as treated fertiliser.	Ensure all transport vehicles and containers are adequately cleaned before loading of plant products and other commodities such as fertiliser.	❑

People

If it can move, it can carry diseases, pests and weeds. For this reason, people, vehicles and equipment pose a high biosecurity risk and should be managed accordingly.

People	Potential risk	Actions to reduce risk	Action(s) to take ✓✗
Property access			
 Image: gourmetgetaways.com.au	Multiple entry points to your property make it difficult to control visitor access and manage high risk visitors such as those who visit multiple properties each day.	Limit the number of access points to your property (lock unused gates). Use signs to direct visitors to designated parking or reception areas. Access to production areas (fields, sheds etc.) should be limited to a restricted range of personnel only.	❑
Signage			
	Never assume that people know what to do when they arrive at your property. Without signage, visitors and staff may be unaware of the biosecurity procedures enforced on your property.	Erect signs to instruct visitors and staff. Use clear instructions and provide relevant contact details. Have a script of risk assessment questions ready to ask and instructions to be given to visitors.	❑
Visitor risk assessment			
 Image: James Hutton Limited	Visitors can unknowingly carry diseases, pests and weeds on their clothes and personal items. The risk is greater if they've been in contact with other crops, or have recently been interstate or overseas.	Conduct a risk assessment before you allow a visitor onto your property. If required, provide cleaning equipment (e.g. disinfectant footbath) or a change of clothing or footwear to reduce the risk. If you cannot reduce the risk, refuse entry to high risk visitors.	❑
Visitor tracing			
	If you don't know where visitors have come from or what they have been doing, it will be difficult to trace back or trace forward in the event of an incursion or disease outbreak.	Direct all visitors to a designated parking area away from crops and ask them to sign a visitor register. Limit access to and contact with crops, and eliminate any unnecessary contact altogether.	❑

People	Potential risk	Actions to reduce risk	Action(s) to take	✓✗
General hygiene				
	Pests, disease causing organisms and weed seeds can be present on hands, clothing, footwear and personal items of people.	Provide hand washing facilities, foot baths or alternative clothing and footwear for visitors to use while on-farm.		❑
Field days or walks				
	Holding field days or walks on a property introduces risks from a wider region with people potentially carrying pest, disease or weed material from their own properties, on their vehicles and shoes or clothing.	If you are holding a field day on your property make sure you: » provide a designated parking area away from production areas » use signage to direct visitors to a sign in area with a visitor register » put in place general hygiene measures such as foot baths to minimise risk » limit contact with production areas and use only main roadways and tracks		❑

The previous introduction of diseases such as blueberry rust into Australia has had a major impact on the blueberry industry, requiring additional farm management practices and market access restrictions. Putting farm biosecurity measures in place can help protect your property from the spread of established pests and diseases and increases your industry's preparedness for the next introduced threat.

Vehicles, equipment and machinery

Diseases, pests and weeds can enter a farm and be spread by equipment and vehicles, either directly or in plant material or soil. It is important to maintain equipment hygiene and ensure all vehicles that visit your property are clean and well maintained.

Vehicles and equipment	Potential risk	Actions to reduce risk	Action(s) to take	✓✗
Equipment hygiene			Image: podgardening.co.nz	
	Tools and equipment can carry diseases, pests and weeds seeds. The risk for disease spread is higher when equipment is borrowed, lent or bought second-hand from other properties. Cultivation machinery and equipment can transfer insect pests and diseases to subsequently managed crops.	Clean and disinfect tools and equipment before and after use on crops. Clean and disinfect second-hand, borrowed or lent equipment before and after use. Ensure no soil, plant material including weed seeds, or pests are left on or in machinery or transport equipment by removing any contaminants and disinfecting.		❑
Dedicated equipment			Image: podgardening.co.nz	
	Practically, it may be best to have dedicated tools, clothing and footwear for use on crops affected by pests or diseases. This equipment should never be used in clean areas of your property.	Have dedicated tools, clothing and footwear available for use in production areas affected by pests or disease. Always work with sick plants last (work from clean to dirty).		❑
Vehicle entry points				
	Multiple, unsecured entry points to your property make it difficult to control access and manage high risk visitors such as utility providers who visit multiple properties every day.	Encourage visitors to enter the property via one or two routes only. Use signs to inform visitors about property access points.		❑
Vehicle hygiene and washes				
	All parts of a vehicle can carry disease causing organisms, pests and weed seeds.	Provide a wash area for vehicles that need to enter production areas. If possible, use a high pressure wash down (or blow down) facility located well away from crops for cleaning vehicles and equipment. For maximum protection, it is recommended that you also disinfect after washing.		❑

Vehicles and equipment	Potential risk	Actions to reduce risk	Action(s) to take ✓✗
Vehicle movement and parking			Image: stevesteinhardt.com
	All parts of a vehicle can carry disease causing organisms, pests and weed seeds. By restricting parking and vehicle movements within the property, it is easier to control and monitor the spread of diseases, pests and weeds.	Restrict visitor vehicles to designated parking areas. Not all vehicles need to access production areas. Where possible have designated vehicles that are for use on-farm or use your own farm vehicles to transport visitors around the property. Monitor areas around parking facilities for signs of diseases, pests and weeds.	❑
Run-off from wash areas			Image: cleanawater.com.au
	Run-off from vehicle washing can contain diseases, pests and weed seeds.	Collect run-off from vehicle wash areas in a sump, or direct it away from production areas. Monitor areas around cleaning facilities for signs of pests and diseases, and treat weeds before they set seed or become established.	❑
Roads and tracks			Image: tenterfieldstar.com.au
	There is an increased risk of introducing diseases, pests and weeds when vehicles travel off or divert from established roads and tracks.	Have a supply of farm maps on hand to give to visitors and farm workers. Ask visitors to stay on established roads or tracks. Check areas next to roads and tracks for signs of diseases, pests and weeds, and treat before becoming established.	❑

Thousands of viable weed seeds can be found at the bottom of automatic carwashes, with one study finding 18 566 weed seeds belonging to 259 different species.

Moerkerk M, Machinery Hygiene – What is on our vehicles? Proc. 2nd Victorian Weed Conf. 2005, pp 99-101

Production practices

Good on-farm hygiene reduces the risk of spreading pests and diseases. Implement simple hygiene practices for water, product packaging, storage facilities, waste materials and plant propagation activities.

Production practices	Potential risk	Actions to reduce risk	Action(s) to take	✓✗
Water management				
 Image: Nelson Irrigation, www.nelsonirrigation.com	Managing water supply is important for the maintenance of healthy plants. If water sources become contaminated they can spread pests throughout production areas.	Where possible, use drip irrigation for recycled water to avoid aerosol formation. Prevent algal blooms by aerating or treating water that is high in nutrients and is stored in dams.		❑
Plant waste				
 Image: T. McCamant, Central Lakes College, extension.umn.edu	Plant material can still harbour pests and diseases even after it is removed from the growing plant.	Collect all plant waste that shows signs of pests or disease and dispose of it by deep burial or burning, well away from water sources and production areas. For cuttings or healthy waste plant material, use a dedicated waste management facility or compost it thoroughly.		❑
Monitoring and surveillance				
 image: istock	Early detection of pests and diseases gives you the best chance of preventing pests or diseases from establishing on your property and ongoing additional expenses for their control. Early detection also increases the chances of eradicating a new pest or disease. Recording the absence of pests or diseases is just as important as recording their presence.	Regularly monitor your crops. Become familiar with pests and diseases commonly found in your region so you will know if you see something different. Monitor along roadsides and fence lines along the perimeter of your farm for new weeds. Display posters showing common pests and diseases to help staff with identification.		❑

Production practices	Potential risk	Actions to reduce risk	Action(s) to take ✓✗
Monitoring frequency			
 Image: Cassie Bousska, pnwhandbooks.org	Additional monitoring may be required during disease outbreaks, seasonal presence of insects, or growing periods. This can minimise the chance of diseases, pests and weeds entering and spreading on your property.	Increase the frequency of inspections of crops during periods of higher risk, such as known disease outbreaks, increased insect and wildlife activity or growing periods for weeds.	❑
Agvet chemicals			
 Image: ontargetspray.com	Chemical residues on plant products can result in rejection from international and domestic markets, and can pose a risk to human health.	Be sure to follow the instructions on the label and observe withholding periods after treatments. Where necessary, seek training in appropriate use of agvet chemicals.	❑
Resistance to chemicals			
 Image: ontargetspray.com	Inappropriate use of chemicals can cause insects, diseases or weeds to become resistant, making control difficult. This can cause more widespread and ongoing biosecurity problems.	Rotate chemistry and adopt other resistance management practices to reduce the development of resistance in weeds, insects and pathogens.	❑

The Australian Blueberry Growers Association has identified eight high priority exotic pests of blueberries that are impacting growers overseas. Any of these pests could severely impact the Australian blueberry industry if they were to be introduced:

- Blueberry aphid
- Mummy berry
- Blueberry leaftier
- Spotted winged drosophila
- Brown rot
- Sudden oak death
- *Xylella fastidiosa*
- Glassy-winged sharpshooter

Visit the Plant Health Australia website for more information on exotic pests of blueberries and other berry industries **www.planthealthaustralia.com.au/industries/**

Weeds

Weeds are a widespread nuisance but can also cause harm to your business, so they need to be actively controlled.

Weeds	Potential risk	Actions to reduce risk	Action(s) to take ✓✗
Weeds			
 Image: www.therealfarmhouse.com	Weed species are significant biosecurity problems in their own right, as well as being alternative hosts of some agricultural and horticultural pests. You may have a legal obligation to control certain weeds in your region. Visit **weeds.dpi.nsw.gov.au** or ask your local council to find out.	Establish a weed management plan for your property, including plans for eradicating, containing or managing current weeds on your property, and preventing the introduction of new species. Control weeds along dirt tracks and roads, and next to vehicle parking or cleaning areas. Look for outbreaks of weeds, especially after drought, fire and flood.	❑
Property and land disturbance			
	Property and land disturbance through excavation activities, fire, flood or storms provide an opportunity for pests and weeds to become established.	Control weeds in fields after flooding, drought or fire. Inspect any areas that have been recently landscaped (e.g. new roads or dams) or affected by land destruction (e.g. fences) and treat weeds before they have a chance to set seed and become established.	❑

An average of 16.5 weed species is carried by every tractor, slasher, mower, truck, grader, backhoe, trailer, excavator and dozer travelling along Australian roads.

Moerkerk, M, Risk of weed movement through vehicles, plant and equipment: results from a Victorian study. 15th Australian Weeds Conference, Papers and Proc. Adelaide, South Australia, 2428 September 2006: Managing weeds in a changing climate 458-461 pp.

Train, plan and record

Ensure staff are well trained and that you have the ability to trace where plants have come from and where they have been located. Keep accurate records of purchases, sales and movement of all products entering or leaving the property.

Trail, plan and record	Potential risk	Actions to reduce risk	Action(s) to take	✓✗
Biosecurity planning				
 Image: examiner.com.au	An on-farm biosecurity plan will help you prioritise the implementation of biosecurity practices relevant to your property.	Devise a plan for your property, prioritise actions, and update the implementation table as you achieve goals. Identify any areas that are considered to have both a Major Impact and are Very Likely (High Risk) and address these first. See 'risk assessment matrix' on page 5.		❑
Record keeping				
	A property owner or manager should be able to 'trace back' and 'trace forward' if there is a disease, pest or weed incursion on their property. Keeping a record of problem areas (e.g. weeds, diseases) can also help with farm management.	Keep records of purchases and sales, health certificates and declarations, and pest and disease monitoring activities. Keep a record of problems encountered and where they are to help you manage your property to minimise risk of spread.		❑
Vendor declarations and statements				
	Simple visual inspection of plant material on arrival to your property may not be enough to know they are healthy.	Request history and supporting paperwork where applicable, such as Plant Health Certificates.		❑

Trail, plan and record	Potential risk	Actions to reduce risk	Action(s) to take	✓✗
Staff training				
 Image: abc.net.au	Anyone working on the property (including friends and family) may not know how easily diseases, pests and weeds can spread and how to prevent this from happening.	Inform staff of the biosecurity standards required on site. Provide biosecurity training or information sessions for staff. Have posters to remind staff of the importance of farm biosecurity.		❑
Monitoring and surveillance				
 Image: theadvocate.com.au	Active monitoring and surveillance can provide early warning of potential or emerging problems with pests and diseases. Monitoring data can be used to support continued access to domestic and international markets. Recording the absence of pests or diseases is just as important as recording their presence.	Keep a record of all crop monitoring, even if you don't see anything unusual.		❑
Suspect diseases, pests and weeds				
 Image: Jay Pscheidt, Oregon State University	You have a responsibility to report unusual diseases, pests or weeds to an agronomist, state DPI or the Exotic Plant Pest Hotline.	Know who to call if your suspect you have an emergency disease or plant pest. Keep details of state DPIs, agronomists or Exotic Plant Pest Hotline at hand.		❑

Thank you for taking the time to develop your farm biosecurity plan. Every action you put in place is helping to protect your property, your region, your industry and Australia. Remember to revisit this plan to record your progress and explore future actions.

Further resources

Berry plant protection guide 2016-17
NSW DPI Management Guide

Farm Biosecurity website
www.farmbiosecurity.com.au

Plant Health Australia website
www.planthealthaustralia.com.au

Exotic Plant Pest Hotline
For reporting suspect exotic plant pests
1800 084 881

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Image: (left) John Clark, www.growingproduce.com; (right) Kelly Heidbreder, www.toledoblade.com

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