



Banana best management practices

On-farm biosecurity self-assessment checklist

**Horticulture
Innovation
Australia**



**Queensland
Government**

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Self-assessment checklist

On-farm biosecurity is a vital component of day-to-day banana farming operations and minimises the risk of introducing new pests, diseases and weeds onto your property. By completing this self-assessment checklist, you will quickly establish which on-farm biosecurity practices are working well and where improvements may be possible. The checklist will also help you prioritise areas for improvement and can be used as the basis for your on-farm biosecurity plan.

This self-assessment checklist forms part of the Banana best management practices: On-farm biosecurity guideline. The full version of the guideline includes reference material that expands on the information in the self-assessment checklist and contains links to fact sheets, videos and legislative requirements. The full version of the BMP guideline can be downloaded from biosecurity.qld.gov.au

Use this self-assessment checklist as a guide only—it will never replace expert advice.

There may be a number of possible answers to some of the questions, so choose the answer that best suits your situation. If the question is not relevant to your particular situation, select 'N/A' (not applicable).

Most questions require a single answer, but for some questions more than one answer may be applicable. These questions are marked 'tick all that apply'. In these cases, an overall practice rating is determined by the number of practices that you select from the list.

There are three biosecurity practice ratings:

1. **Best** demonstrates **high level biosecurity practices** that minimise the risk of introducing new pests and diseases to a property
2. **Okay** demonstrates biosecurity practices that reduce the risk of introducing new pests and diseases to a property; however, **improvements should be made** to minimise the risk
3. **Improve** demonstrates biosecurity practices that are below industry standard and **improvements must be made** to minimise the risk.

Most questions will have all three of these practice ratings as possible answers. However, some questions will only have two possible ratings.

Any practices checked as 'improve' should be made a priority practice for the business to address and improve. Similarly, practices checked as 'okay' should be the next prioritised practices to be improved.

On-farm biosecurity is only effective if all practices are of a high standard and adhered to at all times. A single practice failure can potentially lead to the introduction of a new pest or disease.

Zoning

1. Is there zoning in place on your farm?

Best

Yes—go to question 2

Improve

No—go to ‘General farm operations’ checklist (p. 4)

2. How many zones is your farm divided into?

Best

Three (exclusion, separation and farming)

Okay

Two (separation and farming)—go to question 4

3. What practices are in place in your exclusion zone? (Tick all that apply)

- Designated area where visitors and staff park vehicles
- Area is surfaced (concrete, bitumen or gravel)
- Fences or barriers to manage people and vehicle movement into other zones
- Clear signage directs staff and visitors
- Footwear is managed at the edge of this zone
- Water run-off from this area is directed away from other zones

Best

6

Okay

4

Improve

< 4

4. What practices are in place in your separation zone? (Tick all that apply)

- Designated area where essential vehicles can drive
- Area is surfaced (concrete, bitumen or gravel)
- Fences or barriers stop essential vehicles and people crossing into other zones
- Vehicle disinfected upon entry and exit
- Clear signage directs staff and visitors
- Footwear is managed when moving from this zone into other zones
- Tools, equipment, vehicles and/or machinery remain in this zone
- Water run-off from this zone is directed away from other zones
- Loading and unloading system for farm supplies avoids cross-contamination between zones
- Visitors and staff sign in and out when entering and exiting this zone

Best

10

Okay

8

Improve

< 8

5. What practices are in place in your farming zone? (Tick all that apply)

- Fences or barriers to minimise movement of people, vehicles, machinery and animals
- Farm machinery and vehicles remain in the farming zone—if they need to cross zones they are cleaned and disinfected
- Wash-down facility available to clean and disinfect vehicles entering and exiting this zone
- Tools and equipment (e.g. cane knives) remain in this zone
- Footwear is dedicated to this zone
- Clear signage directs staff and visitors
- Water run-off is managed

Best

7

Okay

5

Improve

< 5

General farm operations

Staff and visitors

1. Overall footwear management

- | | | |
|----------------|--------------------------|---|
| Best | <input type="checkbox"/> | Footwear is managed by changing shoes AND using footbaths |
| Okay | <input type="checkbox"/> | Footwear is managed by changing shoes OR using footbaths |
| Improve | <input type="checkbox"/> | Footwear is NOT managed |

2. Footwear exchange/s (Tick all that apply)

- Footwear exchange stations are located at the edge of each zone
- Barriers and signs direct and instruct visitors and staff
- Footwear is changed in a manner that doesn't allow for cross-contamination
- Different footwear is dedicated to each zone
- Footwear in zones are easily distinguishable (e.g. colour-coded)
- Footwear is cleaned and disinfected (e.g. using an effective footbath)

Best

6

Okay

4

Improve

< 4

3. Footbath/s (Tick all that apply)

- Stiff brushes and/or high-pressure water is available to remove all soil/mud from footwear
- Footbaths are long enough for two footsteps
- Barriers and signs direct people through footbaths
- Footbaths have a hard-surface approach and exit
- Footbaths are undercover
- Footbath disinfectant is mixed as per label instructions and changed regularly
- Footbath waste is disposed of in a safe manner (e.g. soil settled out and buried away from crops, disinfecting solution placed in vegetated area away from crops and waterways)

Best

7

Okay

5

Improve

< 5

Vehicle and machinery movement

4. People required to access your farming zone (e.g. contractors and agronomists)

- | | | |
|----------------|--------------------------|---|
| Best | <input type="checkbox"/> | People that are required to access your farming zone are supplied with vehicles and machinery dedicated to your farm |
| Okay | <input type="checkbox"/> | People that require access to your farming zone are NOT supplied with vehicles and machinery dedicated to your farm—vehicles and machinery brought to your farm are cleaned and disinfected upon entry and exit |
| Improve | <input type="checkbox"/> | People that require access to your farming zone are NOT supplied with vehicles and machinery dedicated to your farm—vehicles and machinery brought to your farm are NOT cleaned and disinfected upon entry and exit |

5. Fertiliser delivery

Best

- Fertiliser is delivered and unloaded at the edge of the farming zone in a way that prevents the wheels of the delivery vehicle crossing into the farming zone (e.g. hi-ab crane, fork extensions)

Okay

- Fertiliser is delivered into the farming zone and the delivery vehicle is cleaned and disinfected upon entry and exit

Improve

- Fertiliser is delivered to your farm and there are no on-farm biosecurity procedures

6. Fuel delivery

Best

- Filling points on fuel tanks are located on the edge of the farming zone so that the fuel truck does NOT enter the farming zone and farm vehicles still have access

Okay

- Fuel tanks are located in the farming zone and fuel trucks are cleaned and disinfected upon entry and exit

Improve

- Fuel tanks are located in the farming zone and fuel trucks are NOT cleaned and disinfected upon entry and exit

- N/A—There are no fuel tanks on your farm

7. Waste

Best

- General shed waste is located on the edge of the farming zone to allow the pick-up truck to collect waste in a manner that does NOT allow the truck to cross into the farming zone

Okay

- General shed waste is located in the farming zone and the pick-up truck is cleaned and disinfected upon entry and exit

Improve

- General shed waste is located in the farming zone and the pick-up truck is NOT cleaned and disinfected upon entry and exit

8. Utilities (e.g. electricity and water service providers)

Best

- Access onto your farm by utility companies is minimised and any essential vehicles that move into the farming zone are cleaned and disinfected upon entry and exit

Improve

- Vehicles are NOT cleaned and disinfected if they require entry

- N/A—No utility companies have a requirement to enter your farm

9. Pallets

Best

- Pallets are delivered to an area designated for pallet delivery, which is either banded or has sufficient fall to prevent soil entering the farm

Okay

- Pallets are inspected upon arrival and immediately returned if they have soil on them

Improve

- Pallets are inspected before they leave your property and cleaned and disinfected if required

10. Second-hand vehicles, machinery, equipment and tools

Best

- Only new vehicles, machinery, equipment and tools are purchased for your farm

Okay

- The history of the vehicle, machinery, equipment or tool is examined and the risks considered before it is purchased, and it is cleaned and disinfected before entering your farm

Improve

- Little consideration about the history of second-hand equipment is given and it is NOT cleaned and disinfected before entry

Roads and access

11. Roads to residences

- Best** Dedicated access roads to residences are hard-surfaced (e.g. ballast rock, bitumen) and farm machinery never comes into contact with these roads
- Okay** Residences located on your farm do NOT have dedicated access roads; however, vehicles are cleaned and disinfected when entering and exiting your farm
- Improve** Residences located on your farm do NOT have dedicated access roads and vehicles are NOT cleaned and disinfected when entering and exiting your farm
- N/A—There are no residences located on your farm

12. Farms adjacent to public roads (Tick all that apply)

- Blocks adjacent to public roads have been surveyed and fenced
- Signs are erected to alert the public that no entry is permitted without permission
- Water run-off from the road is directed away from your farm
- N/A—There are no public roads adjacent to your farm

Best

3

Okay

1

Improve

< 1

13. Farms separated by public roads (non-contiguous)

- Best** Machinery and farm equipment is dedicated to either side of the public road, and roll-on/roll-off points are used to minimise movement and/or a ferry-style system is used to prevent contact with the road
- Okay** Movement of machinery and vehicles on or across a public road is minimised, and machinery and farm equipment that does need to cross the road is cleaned and disinfected each time it enters or exits your property (this is recorded in a register)
- Improve** Little consideration is given to manage movement across public roads
- N/A—Your farm is a contiguous parcel of land (e.g. blocks are not separated by public roads, railway lines or easements)

14. Railway lines

- Best** There is a management strategy in place to manage movement across railway lines (e.g. drainage to divert run-off water, clean and disinfect vehicles and machinery each time they cross)
- Improve** Little consideration is given to the risk crossing a railway line poses to your property
- N/A—There are no railway lines running through your farm

Cleaning and/or disinfecting facilities for vehicles and machinery

15. Do you have a cleaning and/or disinfecting facility on your farm?

Best

Yes—go to question 16

Best

No, because there are adequate separation measures in place (e.g. hard-surface roads, brick walls, fences) and vehicles and machinery are dedicated to your farm—go to question 19

Improve

No, but a wash-down facility would complement the biosecurity practices in place on your farm—go to question 19

16. What do you treat?

Farm equipment, vehicles or machinery entering the farming zone (**wash-down facility**)—go to question 17

Service vehicles (including transport trucks, delivery vehicles and visitor vehicles) accessing the packing shed via the separation zone (**disinfecting facility**)—go to question 18

All of the above—go to question 17

17. What practices are in place for your wash-down facility? (Tick all that apply)

Hard-surface pad

Gravel or hard surface on entry and exit

Clean water (NOT recycled)

Effective disinfecting products (e.g. quaternary ammonium-based products) used at recommended label rate and contact time

Adequate water pressure to remove soil and plant material

Water splash is controlled

Instructional signage

Cleaned thoroughly after each use

Waste water/products managed to ensure containment and safe disposal

Cleaning facilities available to clean and disinfect footwear, floor mats, tools and equipment

Cleaning and disinfecting details recorded after each use

Best

11

Okay

9

Improve

< 9

18. What practices are in place for your disinfecting facility? (Tick all that apply)

Hard-surface base or metal grid

Gravel or hard surface on entry and exit

Effective disinfecting products (e.g. quaternary ammonium-based products) used at recommended label rate and contact time

Tested to determine efficiency of disinfectant coverage

Maintained regularly to ensure effectiveness

Instructional signage

Each use of the facility recorded

Best

7

Okay

5

Improve

< 5

Fencing

19. Perimeter fencing

- Best** Your entire property boundary is fenced
- Okay** Fences are constructed along public roads and high-risk areas
- Improve** No fencing has been constructed

Tools and equipment

20. Tools and equipment

- Best** All tools and equipment are dedicated to zones on your farm and never leave these zones
- Okay** All tools and equipment are dedicated to zones on your farm—when tools and equipment need to cross into another zone they are cleaned and disinfected (records are kept of these occasions)
- Improve** Little consideration is given to the movement of tools and equipment within zones on your farm

Water supply, movement and disposal

21. Irrigation source

- Best** Irrigation water is sourced from a bore
- Improve** Irrigation water is sourced from a river, stream, channel or dam
- N/A—Your banana paddocks are not irrigated

22. Irrigation equipment

- Best** Irrigation pumps, sprinklers, drip tape and equipment are only sourced new
- Improve** Little consideration is given to the source of irrigation equipment
- N/A—Your banana paddocks are not irrigated

23. Water source for packing shed

- Best** Water for the packing shed is sourced from a bore, rainwater or town water
- Improve** Water for the packing shed is sourced from a river, stream, channel or dam
- N/A—Fruit is sent to a central packing shed

24. Water source for wash-down facilities

- Best** Water for wash-down facilities is sourced from a bore, rainwater or town water
- Improve** Water for wash-down facilities is sourced from a river, stream, channel or dam
- N/A—Your farm does not have wash-down facilities

25. Managing water run-off from your property

- Best** Soil erosion management practices (including grassed inter rows, contouring or laser levelling, sediment traps and/or wetlands) are used to minimise soil and water movement from your property into adjacent properties, roads and/or watercourses
- Improve** No attempts have been made to minimise soil and water movement off your property

26. Managing water run-off from neighbouring properties

- Best** All run-off from neighbouring properties is intercepted and managed with the use of drains and sediment traps to divert water flow away from the farming zone
- Okay** Run-off from neighbouring properties is managed to the best of your ability with the use of drains to divert water flow away from the farming zone
- Improve** Little consideration is given to managing run-off from neighbouring properties
- N/A—Run-off water does not flow onto your farm from neighbouring properties

Waste management

27. Waste—plant material

- Best** All waste plant material (including leaves, bells, stalks and fruit) are dumped in a dedicated area on your farm that does not drain towards paddocks in the farming zone—this area doesn't flood and is fenced to restrict access to feral animals
- Okay** All waste plant material (including leaves, bells, stalks and fruit) remain in, or are returned to the paddock
- Improve** Waste plant material (including leaves, bells, stalks and fruit) is spread to other properties
- N/A—There is no waste plant material as fruit is sent to a central packing shed

28. Waste—bunch bags and string

- Best** Bunch bags and string are currently dumped as dry waste at the local dump or through a waste contractor, and there is a plan in place to safely dispose of this waste if an exotic pest or disease is detected on your property (e.g. cleaning and disinfecting prior to dumping or dumping as contaminated waste)
- Okay** Bunch bags and string are currently dumped as dry waste at the local dump or through a waste contractor
- Improve** There is no formal disposal method for bunch covers and string

Farm-based animal movement

29. Domestic animals and livestock

- Best** Fences are constructed and maintained to contain livestock and limit the movement of domestic animals (including farm dogs)
- Improve** Movement of livestock and domestic animals (including farm dogs) is unmanaged
- N/A—There are no livestock or domestic animals (including farm dogs) on your farm

30. Feral animals and wildlife

- Best** An animal-proof (e.g. chain link) fence is constructed around the boundary of your property to minimise movement of feral pigs, wallabies etc., and active control measures are in place to minimise feral pig numbers (e.g. trapping)
- Okay** Animal-proof fencing is constructed around some of your farm, and control measures are in place to minimise feral pig numbers (e.g. trapping)
- Improve** Some control measures are in place to minimise feral pig numbers (e.g. trapping)

Crop production

Land preparation

1. Tractors and equipment

Best

Tractors and equipment used to establish new paddocks remain on your farm

Okay

Tractors and equipment used to establish new paddocks are cleaned and disinfected when entering and exiting your farm (records of these movements and cleaning and disinfecting are kept)

Improve

Tractors and equipment used to establish new paddocks are not cleaned and disinfected when entering and exiting your farm

Planting

2. Planting material

Best

Planting material is sourced from certified tissue culture nurseries

Okay

Planting material is sourced from bits or suckers from your own property, which has biosecurity management systems in place

Improve

Planting material is sourced from bits or suckers from other properties

Crop production

3. Soil ameliorants (e.g. compost, mill ash)

Best

The origin and processing of organic-based soil ameliorants have been considered, do not contain banana plant material and are sourced from an area that is not associated with banana production

Improve

The origin and processing of organic-based soil ameliorants have not been considered

N/A—No soil ameliorants are applied

Farm management

4. New staff and visitor biosecurity induction

Best

New staff and regular visitors undergo an induction about on-farm biosecurity practices and records of training are kept

Okay

New staff undergo an induction about on-farm biosecurity practices and no records of training are kept

Improve

There is no induction for staff or regular visitors about on-farm biosecurity practices

5. Additional staff biosecurity training

Best

In addition to general on-farm biosecurity training, farm staff are trained to identify plants with unusual symptoms and are made aware of how to report them

Improve

Farm staff don't receive training on how to identify plants with unusual symptoms and are not made aware of how to report them

6. Cleaning and decontamination induction

Best

- Staff and visitors required to use wash-down facilities are inducted on how to thoroughly clean and disinfect vehicles, machinery, tools and equipment, and records of these inductions are kept

Okay

- Staff and visitors required to use wash-down facilities are inducted on how to thoroughly clean and disinfect vehicles, machinery, tools and equipment, and no records of these inductions are kept

Improve

- Staff and visitors are not inducted on the use of wash-down facilities

Improve

- There are no wash-down facilities on the farm

7. Monitoring on-farm biosecurity practices

Best

- Random spot checks are conducted to ensure staff and regular visitors are following on-farm biosecurity practices (checks are recorded)

Improve

- No random spot checks are conducted

8. Natural disaster management planning (cyclones, floods, storms etc.)

(Tick all that apply)

- A pre- and post-disaster management plan to protect wash-down facilities and ensure there is adequate resources to operate facilities post-disaster (e.g. disinfecting supplies, alternative power sources available)
- A plan that determines how plant debris and fruit that has come into contact with the ground will be managed
- A plan to rapidly educate and manage the movement of untrained personnel who may be required to access your property
- A plan to re-establish blocks using clean planting material
- A pre- and post-disaster management plan to protect on-farm biosecurity infrastructure (e.g. footbaths) and rapidly re-establish any damaged infrastructure post-disaster

Best

5

Okay

3

Improve

< 3

9. Records (Tick all that apply)

- Daily staff register
- Visitor register
- Training records for staff and regular visitors
- Records of disinfecting vehicles that enter and exit the separation zone
- Records of cleaning and disinfecting vehicles and machinery that enter and exit the farming zone (also includes other internal zones in the case of properties with multiple crops)
- Records of spot checks
- Records of planting in new blocks
- Property map with zones

Best

8

Okay

6

Improve

< 6

Fruit movement

Fruit harvest

1. Harvesting fruit (Tick all that apply)

- Tools that are used to harvest remain in the farming zone
- Leaves are NOT used for protection of bunches on trailers
- Transport vehicles and machinery are driven at a speed that reduces the spread of mud or dust
- Fruit that comes into contact with the ground is left in the field
- Fruit is delivered to the section in the shed that the farming zone extends into
- Farm tools and equipment are thoroughly cleaned and disinfected daily

Best

6

Okay

4

Improve

< 4

Fruit packing and packing shed

2. Packing shed activities (Tick all that apply)

- One-way traffic of fruit is maintained throughout the packing shed
- Fruit is packed into new cartons or clean returnable crates
- Packed cartons do not touch the floor of the packing shed
- The loading dock area is kept free from soil and plant material
- Reject fruit and plant waste is transferred back to the farming zone side of the shed without coming into contact with the floor

Best

5

Okay

3

Improve

< 3