

**Farm Biosecurity Management Plan**

(*Farm)*

*(Address)*

# Summary

# Action Plan prior to and following TR4 detection

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# Purpose

The purpose of this Farm Biosecurity Management Plan (Biosecurity Plan) is to ensure all activities on the …….Farm minimise the risk of spreading Panama Disease Tropical Race 4.

It provides farm layout, operations, practices and biosecurity measures applied on this property, to guide owners and managers on how to manage and maintain the property without further spreading TR4.

This information will help meet the conditions that are required by:

*- Biosecurity Act 2014*

*-* Biosecurity Regulations 2016

- Notice of presence of Panama Disease Tropical Race 4 (TR4)

- Biosecurity Manual.

# 2. Considerations

The main issues to consider are that:

1. TR4 can be spread through the movement of infected plant material and as spores in infested soil and contaminated water e.g. attached to plants, vehicles, appliances, equipment, footwear and clothing.
2. Due to the biology of the pathogen, it is possible that land may be infested with TR4 even if infestation is not evident and plants show no visible symptoms.

# 3.Scope

*(Owner/manager* ) as the owner of the ....................................Farm has prepared this Biosecurity Plan in collaboration with the Panama TR4 Program. The Plan demonstrates that:

1. (*Owner/manager*) is meeting our statutory obligations and complying with all conditions and requirements as prescribed by Notice of presence of Panama Disease Tropical Race 4, *Biosecurity Act 2014*, Biosecurity Regulations 2016 and the Biosecurity Manual, issued by Biosecurity Queensland (BQ).

2. (*Owner/manager*) is working with BQ to develop appropriate conditions and control measures for their farm.

3. (*Owner/manager*) is and can manage pests effectively by:

1. Prioritising pest management to utilise limited resources in the best possible way.
2. Using the most appropriate control methods.

4. (*Owner/manager*) has set clear goals and have appropriate monitoring systems in place.

5. (*Owner/manager)* is a responsible land owner.

This Biosecurity Plan applies solely to the ……… farm, properties identified by BQ as ………..



# 4.Property information

## 4.1 Details

The table below provides the contact details and basic information about the property to which this FBMP relates.

|  |  |
| --- | --- |
| Owner / Occupier |  |
| Business name |  |
| Address |  |
| Property area |  |
| Lot/Plan |  |
| Tenure |  |

## 4.2 Land use and overview of farming regime

[Outline land use and provide an overview of farming regime].

The total property area of …….. is …. ha in size.

A farm map is located on page…..

## 4.3 Panama Disease Tropical Race 4 infection details

Date TR4 detected

Date confirmed by diagnostic testing

Date and details of any BQ Directives and quarantine measures.

4.4 Farm map **- …………….**

4.5 Packing shed **- ……………….**

# 5.Risk Mitigation

## 5.1 Risk mitigation aims

The aims of the risk mitigation steps described in this section are to:

* minimise the spread of Panama disease tropical race 4 both within and external to the property.
* comply with the requirements and conditions described in the Notice of presence of Panama TR4, Biosecurity Manual.
* enable destruction and maintenance activities to occur while managing the risks posed by the disease.

## 5.2 Risk Minimisation Requirements for Panama Disease Tropical Race 4

This section outlines how (*Owner/manager)*, as owners and managers of ………………… farm, will meet the requirements and conditions described in the mandated requirements when performing maintenance and destruction activities on the properties.

The left hand column of the following table are requirements prescribed by the Biosecurity Manual, under the Biosecurity Regulation 2016 s.58 (4)(6).

The right hand columns are to be completed by the managers of property that has Panama TR4 confirmed. This Farm Biosecurity Plan will be updated to include any changes that occur to the Biosecurity Manual.

## 5.3 Roles and responsibilities

*(Owner/manager*) is responsible for:

* Following the requirements in the Notice of presence of Panama Disease Tropical Race 4, and the Biosecurity Manual.
* Reporting any significant issues or contraventions of the requirements prescribed in the Biosecurity Manual to a DAF Inspector.
* Training staff working on …………………….farm to respect and follow appropriate procedures
* Updating this plan as necessary and adherence to this Farm Biosecurity Management Plan.

DAF inspectors are responsible for:

* Auditing processes on site at ………………….and maintaining records of compliance e.g. checklist
* Sharing records of compliance e.g. checklist with ……………owners
* Writing and implementing Notice of presence of Panama Disease Tropical Race 4.

# 6. Processes and procedures that minimise risk of spread of disease from affected land

The following risk minimisation requirements are part of a layered hazard control approach to minimise the risk of disease spread from the …………………..Farm.

|  |  |
| --- | --- |
| **Biosecurity Manual Requirements (Prescribed)** | **Evidence/Comments** |
| 6.1 Record keeping a) Records must be established and maintained that provide accurate and clear information of the risk minimisation measures undertaken on the affected land including:  i. farm plans that identify operational processes and procedures that minimise biosecurity risk of disease spread; and  ii. banana planting records that, as a minimum, record the type of planting material used, whether it was completely soil free, details of where and when the material was sourced from and locations where and when the material was planted; and  iii. vehicle and appliance decontamination and movement registers including details of date, time, vehicle registration/appliance details, where vehicle or appliance is being moved from and to, name and signature of person conducting decontamination and/or move; and  iv. staff training registers; and  v. an inventory of appliances, vehicles, machinery and equipment used on the property; and  vi. fruit and other produce consignment information; and  vii. records of destruction activities undertaken to meet requirement 12A.  These records must be made available for inspection and verification by an authorised officer upon request, to provide evidence of biosecurity compliance with the Regulation. |  |

## 6.2 Carrying out destruction of affected plants

The requirements for ongoing activities will be met as follows

Destruction activities to be supervised by a Biosecurity Authorised officer.

|  |  |  |
| --- | --- | --- |
| **Biosecurity Manual Requirements (Prescribed)** | **Evidence/Comments** | |
| All destruction activities must be notified to an authorised officer prior to commencing.  All banana plants determined to be infected with Panama Disease Tropical Race 4 must be destroyed as soon as possible and no later than two (2) weeks from the date of receiving written documentation advising of a positive test result, and in accordance with the following requirements:  a) where the banana plant is **no longer standing** or has been chopped down:  i. cut off pseudostems at ground level; and  ii. chop up pseudostems and leaf material into 60–80 cm pieces; and  iii. place all pieces of the infected plants in heavy duty plastic bags; and  iv. place 1 kg of urea in each bag and seal bags securely; and  v. scarify (gouge out) the surface of the remaining corm to create a hollow to allow penetration of urea; and  vi. apply 200 g of urea evenly to the surface of each corm, and apply urea 1 kg per m2 evenly around the infected stools; and  vii.inject plant stools with 5 mL glyphosate at a rate of 90 g/L; and  viii.inject plant stools with 2.5 mL product containing imidacloprid 350 g/L (undiluted or 50:50 as per label instructions) to control potential infestations of banana weevil borer;  b) where the banana plant has been window sampled or is still standing:  i. for all plants that are less than 1 metre tall inject at one point around the stem with 5 mL glyphosate at a rate of 90 g/L; and  ii. for all plants that are over 1 metre tall inject at three points around the stem with a total of 15 mL glyphosate at a rate of 90 g/L at waist height (approximately 0.5 - 1 metre) and leave to die *in situ*; and  iii. inject each stool with 2.5 mL product containing imidacloprid 350 g/L (undiluted or 50:50 as per label instructions), to control potential infestations of banana weevil borer; and  iv. ensure all intact bunches are sprayed prominently with red marker dye or paint; and  v. leave all treated plants to dry out.  vi. between 10 and 15 days after the initial treatment, cut off pseudostems at ground level; and  vii.chop up pseudostems and leaf material into 60–80 cm pieces; and  viii.place all pieces of the infected plants in heavy duty plastic bags; and  ix. place 1 kg of urea in each bag and seal bags securely; and  x. scarify (gouge out) the surface of the remaining corm to create a hollow to allow penetration of urea; and  xi. apply 200 g urea evenly to the surface of each corm, and apply urea 1 kg per m2 evenly around the infected stools. | **Tick on completion** | **Date** |
|  |  |
| Between 10 and 15 days after the initial treatment:  a) cut off all injected pseudostems at ground level; and  b) chop up all pseudostem and leaf material into 60–80 cm pieces, and leave on the ground; and  c) scarify (gouge out) the surface of the corm material to create a small hollow to allow the penetration of urea; and  d) add 200 g of urea evenly to the surface of each corm; and  e) treat the destruction zone with urea at a rate of approximately 1 kg per m2; and  f) cover the site, including the bags of infected plant material with high grade plastic sheeting; and  g) secure the plastic sheeting in place (e.g. with tent pegs or other suitable means). |  |  |
| The prescribed measures must be undertaken by or under the direction of the person who is subject to the notice of the presence of Panama Disease Tropical Race 4. | | |
| Only persons undertaking the activities specified in this condition are permitted in the destruction zone. | | |

## 6.3 Carrying out destruction of non- affected plants in the destruction zone

|  |  |  |
| --- | --- | --- |
| A person must treat and destroy all banana plants in the destruction zone, other than the infected plants, as soon as possible and within two (2) weeks in accordance with the following requirements:  a) inject at one point around the stem with 5 mL glyphosate at a rate of 90 g/L glyphosate; and  b) for all suckers that are over 1 metre tall inject at three points around the stem with a total of 15 mL glyphosate at a rate of 90 g/L at waist height (approximately 0.5 - 1 metre) and leave to die in situ; and  c) Inject each stool with 2.5mL product containing imidacloprid 350 g/L (undiluted or 50:50 as per label instructions), to control potential infestations of banana weevil borer; and  d) ensure all intact bunches are sprayed prominently with red marker dye or paint; and  e) leave all treated plants to dry out. | **Tick on completion** | **Date** |
| Between 10 and 15 days after the initial treatment:  a) cut off all injected pseudostems at ground level; and  b) chop up all pseudostem and leaf material into 60–80 cm pieces, and leave on the ground; and  c) scarify (gouge out) the surface of the corm material to create a small hollow to allow the penetration of urea; and  d) add 200 g of urea evenly to the surface of each corm; and  e) treat the destruction zone with urea at a rate of approximately 1 kg per m2; and  f) cover the site, including the bags of infected plant material with high grade plastic sheeting; and  g) secure the plastic sheeting in place (e.g. with tent pegs or other suitable means). |  |  |

# 7. Securing the farm and destruction zone to restrict Panama disease tropical race 4 spread

|  |  |  |
| --- | --- | --- |
| **Biosecurity Manual Requirements (Prescribed)** | **Evidence/Comments** | |
| Within 24 hours of receiving a *Notice of presence of Panama Disease Tropical Race 4,* a person must place signage on the land | **Tick on completion** | **Date** |
| boundary stating that the land is affected by Panama Disease |  |  |
| Tropical Race 4. The signage must be of sufficient size and visibility to discourage unauthorised access to the land. |  |  |
| The affected land must have a combination of built or natural | l |  |
| barriers such as fences, signage, river frontage etc. sufficient to |  |  |
| prevent access by unauthorised vehicles and people, within three months. |  |  |

|  |  |  |
| --- | --- | --- |
| 7.1 Destruction zone 1. A person must as soon as possible and within three (3) working days of receiving documentation advising of a positive test result:  a) create a temporary barrier(s) at a distance of 10 metres surrounding any infected plant(s) (this area is known as the destruction zone); and  b) ensure that the barrier around this area must be sufficient to deter the entry by persons, vehicles or machinery (e.g. by placing bunting or high visibility tape around the area); and  c) display signage on the temporary barrier requiring people to not enter the destruction zone. |  |  |
| 2. A person must fence the destruction zone as soon as possible and within four weeks of receiving a notification confirming the location of an infected plant, using materials suitable to prevent the entry of feral animals and to restrict access by persons, vehicles and machinery. Where a gate is included in the fence, it must be locked and the key stored in a secure location when permitted in the destruction zone. |  |  |
| 3. A person must place signs, or allow an inspector to place signs that warn of the infestation around the fenced destruction zone. |  |  |
| 4. The destruction area must remain undisturbed, other than for the completion of any activities required in this manual.. | | |
| 5. A person must dispose of consumables used to treat plants with Panama Disease tropical Race 4 in a way that minimises the biosecurity risk. | | |
| 7.2 Vehicle and machinery movement All vehicles and machinery exiting the affected land or exiting from the dirty zone to the clean zone must undergo decontamination to ensure that they are free of plant material, soil and other growing mediums and have been effectively disinfected for Panama Disease Tropical Race 4. | | |
| Banana appliances and other things must not leave the destruction zone without effective decontamination (clean and disinfection) to remove all plant material soil and growing medium to minimise the risk of disease spread | | |

# 8. Maintenance of the destruction zone

|  |  |  |
| --- | --- | --- |
| 8.1 Banana plant destruction The person must ensure the destruction zone remains free of banana plants. They must treat regrowth of banana plants or new banana plants in the destruction zone by injecting, at one point around the stem, all suckers that are up to 1 metre tall with 5 mL of glyphosate at a rate of 90 g/L, injecting at three points around the stem all taller (over 1 metre tall) pseudostems with a total of 15 mL glyphosate at a rate of 90 g/L at waist height (approximately 0.5 - 1 metre) and leave to die in situ. | **Tick on completion** | Date |
| 8.2 Pest management 1. The person must apply a barrier spray of the insecticide, bifenthrin (as per label instructions or applicable permit) within 30 cm around the edge of the outer destroyed banana plant stools closest to the fence line as soon as the fence is erected; and |  |  |
| 2. The person must reapply the barrier spray of the insecticide, bifenthrin (as per product label instructions or applicable permit) around the edge of the outer destroyed banana plant stools closest to the fence line between five and six months after the initial application. |  |  |
| 8.3 Weed management The person should manage Panama host weeds in the destruction zone without affecting the ground cover |  |  |

## 8.4 Surveillance plan

(*Owner/manager)*,will conduct regular surveys of the destruction zones (hot spots) on the ……….Farm to identify any regrowth of plants and notify an authorised officer prior to commencing destruction activities.

# 9. Securing the farm against Panama TR4 spread

## 9.1 Processes and procedures that minimize risk of spread of Panama Tropical Race 4 from affected land

The following risk minimisation requirements are part of a layered hazard control approach to minimise the risk of disease spread from the ………………………….Farm.

|  |  |
| --- | --- |
| 9.2 Zoning  a) Zones must be established within the affected land to minimise the risk of disease spread from the affected land. The types of zones that may be established are:  i. destruction zones, which are the areas of the land where plants with Panama Disease Tropical Race 4 have been destroyed, and to which access is only permitted with the approval of an authorised officer;  ii. dirty zones, which are the areas of the land where normal in field farm operations occur; and  iii. clean zones, which are signposted and fenced areas that are not subject to contamination by the disease, to be used as clean corridors that ensure on-farm traffic remains within dirty zones and allow access for off-farm traffic to designated clean areas of the land, and which must therefore include clean access roads into areas such as packing sheds and residences.  b) Clean access roads and parking areas must be:  i. built using clean construction machinery; and  ii. built and maintained in a manner to ensure the surface remains free from soil, mud or plant material; and  iii. either sealed or built from heavy grade gravel; and  iv. designed to include sufficient turning and parking areas for incoming vehicles accessing residences and packing sheds; and  v. accompanied with fencing and signage that restricts movement of persons between the clean access road and surrounding dirty zones; and  vi. equipped with suitable wash-down and decontamination facilities at the exit point where machinery, personnel and equipment exit dirty zones; and  vii. the clean zone, including the access road into areas such as packing sheds and residences and associated parking areas, are fully fenced and signposted, which includes any demarcation lines within packing sheds where clean zones and dirty zones abut. | **Evidence/notes** |
| 9.3 Wash-down and decontamination sites a) Wash-down and decontamination sites must:  i. be tailored to meet the operational and maintenance requirements of the affected land based on farm practises, zoning and hygiene requirements to minimise the risk of disease spread; and  ii. be established on the affected land, at all entry and exit points to the affected land except designated clean roads; and  iii. include facilities to decontaminate banana appliances and any other things such as footwear that are leaving the affected land that have come into contact with banana plant, soil or other growing mediums in which a banana plant has been grown; and  iv. be constructed of ballast rock or a bunded concrete pad within a controlled drainage area to a standard that prevents the escape of decontamination waste and water; and  v. control and contain wastewater on-farm and prevent it from entering waterways or other growing areas; and  vi. be equipped with clean water for wash-down and decontamination processes; (refer to definition of ‘clean water’); and  vii. have suitable equipment for cleaning such as high pressure sprayer, low pressure sprayer, scrub brushes/brooms, footbaths, basins, detergents and disinfectant agents; and  viii.be developed in consultation with local Council to determine if town planning or building permits are required for construction of wash-down bays. |  |
| 9.4 People movement  a) The following must be performed in relation to people:  i. ensure personnel are trained in on-farm biosecurity practises that minimise the risk of disease spread from the affected land; and  ii. ensure that all people on the affected land are aware of the biosecurity practices and zoning on the land including the obligation to ensure that banana pest carriers and other things are not moved from the affected land, unless they are treated in accordance with risk minimisation requirements for dealing with Panama Disease Tropical Race 4 in accordance with the biosecurity manual; and  iii. ensure that all people leaving the affected land or moving banana appliances from the land undertake effective decontamination to prevent the spread of disease from the land; and  iv. provide adequate facilities for decontamination activities. |  |
| 9.5 Vehicle and machinery movement All vehicles and machinery exiting the affected land or exiting from the dirty zone to the clean zone must undergo decontamination to ensure that they are free of plant material, soil and other growing mediums and have been effectively disinfected for Panama Disease Tropical Race 4. |  |
| 9.6 Tool and equipment management All tools and equipment that have been in contact with banana plants, soil or other growing mediums in which a banana plant has been grown must be retained on the land or effectively decontaminated prior to movement off of the affected land. |  |
| 9.7 Waste management Dispose of all waste material (leaves, bells discarded fruit, pseudostem material, bunch stalks, bunch bags, string, decontaminated water, and soil) in a way that does not spread the disease from the affected land. |  |

# 10. Routine, direct and immediate movement of vehicles, appliances and other things between closely separated parcels of affected land.

|  |  |
| --- | --- |
| **Biosecurity Manual Requirements (Prescribed)** | |
| Movement of an appliance, vehicle or any other thing such as footwear that has been in contact with a banana plant, soil or other growing mediums in which a banana plant has been grown on the affected land, is prohibited unless the item fulfils the requirements of either Option A or option B below:  OPTION A:   1. is free of plant material, soil and other growing mediums that banana plants have been growing in; and 2. has been dismantled to the extent necessary for thorough cleaning, decontamination and inspection and has been disinfected with a product known to be effective for Panama disease tropical race 4; and   3. is inspected by a suitably experienced person, to ensure that the appliance is free of plant material, soil and other growing mediums that banana plants have been growing in; and  4. is recorded on a register on the affected land as having been decontaminated,  a) include as a minimum, details of date, time, vehicle registration/appliance details, where vehicle or appliance is being moved from and to, name and signature of person conducting decontamination and/or move  b) must be kept by the business for a period of 12 months; and  c) must be made available on request by an authorised the records of which:  5. is dealt with, after decontamination, in such a way that prevents the banana appliance or other thing from  becoming contaminated prior to the movement; and  6. is moved directly between separated parcels of affected land, using the most direct route appropriate for the movement, without pause or deviation.  OPTION B  1. Where the vehicle, machinery, appliance or other thing is to be moved a short distance across a public road separating parcels of affected land; and  2. an authorised officer is advised, at least 2 business days in advance, of the requirement to move the vehicle, machinery, appliance and other thing between parcels of the affected land and details of the movement; and  3. the movement of the vehicle, machinery appliance and other thing must be carried out with prior notice to, and in the presence of an authorised officer; and  4. Each appliance must undergo cleaning to remove all external soil and plant material and all internal accessible parts are flushed to remove all loose soil and plant material; and | **Evidence/notes** |

# 11. Routine, direct and immediate movement of vehicles, appliances and other things between closely separated parcels of affected land (cont’d).

|  |  |
| --- | --- |
| 5. After cleaning each appliance must be treated with a product known to be effective for Panama disease tropical race 4;  6. Each appliance must travel over Non-Affected Land on Heavy Duty Black Builders Plastic sheeting to ensure that the appliance does not contact the Non-Affected Land (the ground) and to assure that any potential Banana pest carrier that may become dislodged from the appliance is effectively captured in the Plastic sheeting and securely moved on to the Affected Land for disposal; and  7. is recorded on a register on the affected land as having been decontaminated, the records of which:  a) include as a minimum, details of date, time, vehicle registration/appliance details, where vehicle or appliance is being moved from and to, name and signature of person conducting decontamination and/or move  b) must be kept by the business for a period of 12 months; and  c) must be made available on request by an authorised officer.  8. Movement may only occur during favourable weather conditions (not in heavy rain or windy conditions). |  |

# 12. Movement of vehicles, appliances and other things from affected land to non-affected land.

|  |  |
| --- | --- |
| **Biosecurity Manual Requirements** | **Evidence/Comments** |
| Movement from affected land of a vehicle, appliance or other thing that has been in contact with a banana plant, soil or other growing |  |
| mediums in which a banana plant has been grown is prohibited |
| unless the following conditions are met: |
| 1. an authorised officer is advised, at least 2 business days in advance, of   1. the requirement to move the vehicle or appliance or other  thing off the affected land and details of the movement; |
| And   1. the decontamination activities to be undertaken on the |
| vehicle or appliance before the required movement; and |
| 2. the authorised officer determines whether there will be a |
| requirement for formal inspection prior to the appliance leaving the affected land. This decision will be communicated to the owner or occupier and must be followed; and |
| 3. formal inspection is arranged if an authorised officer has  decided that this is required. Inspection must be arranged prior to the item leaving the affected land; and |
| 4. the item must be free of plant material, soil and other |
| growing mediums that banana plants have been growing; |
| And |
| 5. the item has been dismantled to the extent necessary for |
| through cleaning, decontamination and inspection and has  been disinfected with a product known to be effective for |
| Panama disease tropical race 4; and |
| 6. the item is inspected by an authorised officer if advised or by  a suitably experienced person to ensure that the appliance is free of plant material, soil and other growing mediums that banana plants have been growing in; and |
| 7. the movement is recorded on a register on the affected land as having been decontaminated, the records of which: |
| 1. include as a minimum details of date, time, vehicle registration/appliance details, where vehicle or appliance is being moved from and to, name and signature of person conducting decontamination and/or move 2. must be kept by the business for a period of 24 months; and 3. must be made available on request by an authorised officer. |
| 8. The item is dealt with, after decontamination, in such a way  that prevents the vehicles, appliance or other thing from becoming contaminated prior to the movement; and |
| 9. The item is moved directly between the parcel of affected  land and non-affected land, using the most direct route appropriate for the movement, without pause or deviation. |

# 13. Movement of whole banana fruit for human consumption from affected land.

|  |  |
| --- | --- |
| **Biosecurity Manual Requirements** | **Evidence/Comments** |
| The movement of whole banana fruit off affected land is prohibited unless the fruit meets the following requirements: |  |
| 1. Fruit is harvested from healthy vigorous banana plants in a way that minimises contamination with plant material, soil and other growing mediums in which a banana plant has been grown; and |  |
| 2. Fruit is transported to the packing facility in a clean condition; and |  |
| 3. Fruit is processed in a way that ensures it is kept free of plant material (excluding fruit), soil and other growing mediums in which a banana plant has been grown; and |  |
| 4. Fruit prepared for movement off the affected land is packed clean into new cartons; and |  |
| 5. All fruit, cartons, pallets and other shipment containers taken off the land must be free of plant material, soil and other growing mediums in which a banana plant has been grown; and |  |
| 6. Harvested waste products containing any plant material, soil or other growing mediums in which a banana plant has been grown must be retained securely within designated dirty zones on the land; and |  |
| 7. All consumables that are contaminated with plant material, soil or other growing mediums in which a banana plant has been grown must stay on the land or be effectively decontaminated (cleaned of all plant material, soil and other growing mediums and disinfected) to allow movement off of the affected land or be disposed of in a way that manages the biosecurity risk (for example containment and transfer to a quarantine waste facility). |  |

# 14. Movement of analytical of diagnostic samples from affected land generally.

|  |  |
| --- | --- |
| **Biosecurity Manual Requirements** | **Evidence/Comments** |
| Collection and movement of analytical or diagnostic samples from affected land is prohibited unless the person collecting and |  |
| moving the sample has a restricted matter (commercial use) |  |
| permit as outlined in sections 212–216 of the Act and Chapter 7 of |  |
| the Regulation or the person is an inspector or authorised officer |  |
| appointed under the Biosecurity Act 2014 |  |

# 15. Additional standards required to mitigate risks

## 15.1 Plant Material and Soil

|  |  |
| --- | --- |
| Samples of plant material or soil should not be removed from the affected land for testing or any other purpose, without a Restricted Matter Permit. Where a Restricted Matter Permit is provided, the sampling and removal of soil from the affected land should be undertaken by a professional (e.g. a plant pathologist or a trained Inspector) and be supervised by an authorised Inspector |  |
| Affected land should never be used as a source of planting material |  |
| A Restricted Matter Permit is required for the movement of all banana plant material onto and off affected land. |  |
| Soil movement and dust dispersal should be managed so that the |  |
| disease is not spread from the affected land |  |

## 15.2 Water

|  |  |
| --- | --- |
| Prevent overland water flows from reaching infested areas (e.g. through the use of bunding). |  |
| Dam water contaminated with overland flow from an infested property or block should not be used for irrigation. |  |

## 15.3 Farm-based animal movement

|  |  |
| --- | --- |
| Manage feral animals (e.g. pigs), native animals (e.g. kangaroos, wallabies, rats and birds), and insects (e.g. weevil borers) to limit the spread of the disease. | Property is fenced with cattle proof fencing. |
| Vermin should be managed in buildings located on affected land | Vermin controlled. |

## 15.4 Weed management

|  |
| --- |
| Manage host weeds in destruction zone where practical without affecting maximum ground cover in this area. |

## 15.5 Farm Operations

* Where possible fence the block affected by TR4.
* Make a one point of entry and exit for machinery.
* Undertake farm operations last on this block.
* Wash down and disinfect machinery, vehicles and tools on exit.

# 16. Additional notes:

# Appendix 1: Weed host range

Aside from cultivated banana, *Foc* is capable of surviving in a number of weed species, with or without disease symptoms. Weed species that are known alternative hosts for *Foc (not necessarily TR4)* include:

* *Paspalum* species (Waite and Dunlap 1953)
* *Sorghum* species (Meldrum 2012)
* Purpletop Rhodes grass (*Chloris inflata*) (Hennessy *et al*. 2005)
* Milkweed (*Euphorbia heterophylla*) (Hennessy *et al.* 2005)
* Tridax daisy (*Tridax procumbens*) (Hennessy *et al.* 2005)
* Ironweed (*Cyanthillium cinereum*) (Hennessy *et al.* 2005)
* Foxtail millet (*Setaria italica* syn. *Ixophorus unisetus*) (Waite and Dunlap 1953)
* Scurvy weed /Native wandering jew (*Commelina diffusa*) (Waite and Dunlap 1953)
* Abyssinian banana (*Ensete ventricosum*) (Wardlaw 1972)
* *Panicum purpurescens* syn. *Brachiaria mutica* and *Urochloa mutica* (Waite and Dunlap 1953).

# Appendix 2: Abbreviations acronyms and definitions

**ABGC** Australian Banana Growers’ Council

**Affected Land** Means land that a notice under s.58 of the Biosecurity Regulation 2016 applies to. It means L & R Collins Pt Ltd at Dingo Pocket Road farm.

**Appliance** Includes an apparatus, equipment, machinery or a vehicle.

**Authorised officer**

**Banana appliance**

**Banana pest Carier**

Means an authorised person or an inspector.

Means an appliance that has been in contact with a banana plant: or soil, or other growing mediums, in which a banana plant has been grown.

Means: a banana plant; or - soil, or other growing mediums, in which a banana plant has been grown; or - a banana appliance.

**CDA** Controlled drainage area

**Clean** Items or areas known to be free of the disease (Panama Disease tropical Race 4) or free of any substances (e.g. plant material, soil, mud, or dust) that may carry the pathogen (i.e. the tropical race 4 strain of *Fusarium oxysporum* f. sp. *cubense*)

**Clean access** The main vehicular access route to the clean packing facilities and/or

**road** the residence from the infested premises (IP) boundary

**Clean water** Water that has not come into contact with agricultural soil or banana plants, or has been treated to remove contaminating organisms (e.g. bore water, rain water that is collected directly into a tank, town water, chlorinated river water, or water from the Mareeba-Dimbulah Irrigation Scheme.)

**Contamination** The presence of the pathogen (the tropical race 4 strain of *Fusarium oxysporum* f. sp. *cubense*) or substances (e.g. plant material, soil, mud, or dust) that may harbour the pathogen

**Consequence** A qualitative descriptor used to estimate the impact of Panama disease tropical race 4 spread

**DAF** Department of Agriculture and Fisheries (Queensland)

**Decontaminate** Means the process of cleaning with a detergent, rinsing with clean water and applying a disinfectant in accordance with the label instructions, where the disinfectant used is known to be effective for minimising the spread of Panama disease tropical race 4.

**Decontamination** Removal of contaminating substances (e.g. plant material, soil, mud, or dust) or the pathogen (the tropical race 4 strain of *Fusarium oxysporum* f. sp. *cubense*)

**Dirty** Describes an area or zone on affected land, or any item that may be a contamination risk

**Farm biosecurity** A document that a business produces to explain how it will conduct its

**management** business using sound biosecurity practices, and comply with

**plan** Biosecurity Act 2014, Biosecurity Regulation 2016 and Biosecurity Manual. It is updated regularly and used by the business in its decisions and operations to ensure the property is protected from biosecurity risks and does not pose a biosecurity risk to the broader industry.

***Foc*** *Fusarium oxysporum* f. sp. *cubense*

**Infested** A property from which a sample has been taken and confirmed as

**premises (IP)** being Panama disease tropical race 4 by the diagnostic laboratory

**Inspector** Person appointed as an Inspector under the *Biosecurity Act 2014.*

|  |  |
| --- | --- |
| **Mitigating measure**  **Notice of presence of Panama Disease Tropical Race 4** | Any action or activity that reduces the level of risk associated with an event or action  A notice issued under section 58 of the Biosecurity Regulation 2016 requires a person to adopt and comply with stated processes and procedures that minimise the risk posed by Panama Disease Tropical Race 4, the person must carry out the actions in accordance with Risk Minimisation Requirements 12A-12G of the Biosecurity Manual, as required by s.58(4)(b) of the Regulation. |

**Panama TR4** Panama Disease Tropical Race 4

**Pathogen** *Fusarium oxysporum* f. sp. *cubense* (tropical race 4 strain)

**The Program** Panama TR4 Program

**Risk item** Any item that has been in contact, or may have come in contact, with banana plants or soil on which banana plants are, have, or may have been growing, including vehicles, machinery, footwear, clothing, appliances, other farm equipment and any other thing

**Suspect** Premises that have a clear relationship or connection with an infested

**premises (SP)** premises, which is quarantined as a precautionary measure to limit the spread of Panama Disease Tropical Race 4.

# Appendix 3:

# Machinery and vehicle Inventory -

*Machinery and vehicles that stay in the Farm zone*

*Machinery and vehicles that never enter the farm zone*

# Appendix 4: Contractor and visitor register

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| SUPPLIER/VISITOR REGISTER | | | | | | |
|  |  |  |  |  |  |  |
| DATE | BUSINESS NAME | VISITOR NAME | REGO No. | DECON UPON ENTRY | TIME OF ENTRY | VEHICLE INSPECTED | TIME OF EXIT | DECON ON  EXITING | | | NOTES: | | |
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# Appendix 5: Boot exchange station in packing shed