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Panama Tropical Race 4



Biosecurity Plan Report



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Summary

Seven Biosecurity Plans for managing Panama Disease Tropical Race 4 (TR4) were developed for banana farm businesses who considered their farms at high risk from TR4 spread; six of these were down-stream of the first TR4 infested property (1IP) and one had used machinery that had been on 1IP.

All seven farm businesses received an electronic and a hard copy of their Biosecurity Plans. Availability of growers to provide detailed information in the period of the contract made these Biosecurity Plans variable. The Biosecurity Plans were developed as a “working document”, so additional information and planning may be added over time.

The most common issues for these growers were firstly, moving machinery, equipment and fruit, soil free, between non-contiguous blocks on public roads and secondly, record keeping.

Most of these growers have good biosecurity practices in place, but a lack of documentation and records to prove “clean” roads and separation between production blocks, which may become an issue for continuing production if these farms become TR4-infested.

This strategic levy investment project Coordination of Banana Industry R&D (Panama TR4) (BA14012) is part of the Hort Innovation Banana Fund.

The Project

The Australian Banana Growers’ Council (ABGC) contracted the author to conduct a six-week project to develop individual Biosecurity Plans and a generic one. Biosecurity Queensland’s (BQ’s) regulatory requirement for Panama TR4-infested farm operators to have a Farm Biosecurity Management Plan was considered. That is, how growers would address prescribed requirements, if their farm was found to have TR4. Several growers with high risk farms were assisted to complete their individual Biosecurity Plan. The relevant schedule for this contract is shown in *Appendix 1*.

Due the time commitment needed for the development of Biosecurity Plans, no contact was made with transport operators.

ABGC contacted every grower in north Queensland to advise the opportunity to participate in this project if they thought they were at high risk of infection. A Google map of the Tully Valley topography was also considered.

Seven banana farm businesses, where most operated more than one farm, participated in the project. Six of these are at risk of TR4 infection due to their locality down-stream from 1IP and one from machinery sharing with 1IP. The names of participants and these growers’ Biosecurity Plan documents were treated as confidential.

Biosecurity Planning Document

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The Biosecurity Plan developed and used by ABGC for 1IP was converted to a new word document (the Biosecurity Plan Template) and a hard copy provided to growers. This

Biosecurity Plan Template is attached to this Report and was organised into operational activities which would be undertaken after a TR4 positive infection on a farm.

The Template's headings included Record Keeping, Destruction of Affected Plants, Securing the Destruction Zone, Maintenance of Destruction Zone and Securing the Farm against TR4 Spread.

Farm and packing shed maps were also provided to participating growers (where necessary) with overlay plastic sheets to enable biosecurity planning for additional structures and layouts.

Boot exchange layouts were included in some Biosecurity Plans for the packing shed to isolate farm and shed footwear to minimise farm soil movement into the packing shed.

Key Issues

There were two main issues found:

- Difficulty clarifying how machinery and fruit could be moved between non-contiguous blocks on public roads, soil-free; and
- A need to increase the use of record keeping by growers.

The first issue is discussed in detail in Appendices 2, 3 and 4. The key point is that on an infected block or farm, no soil or plant material can be moved off that block or farm.

BQ are currently reviewing existing "prescribed" measures and will consult with ABGC prior to that work being completed. These questions are not easy to answer for BQ as they often depend on particular farm circumstances.

As for the second issue: the BQ prescribed document requirements were not well understood by growers.

The prescribed requirements of the Biosecurity Plan include growers maintaining extensive record systems of their farm activities:

1. Visitor register
2. Vehicle movement register
3. Decontamination register
4. Training register
5. Banana planting register
6. Waste disposal register

The issue of record keeping could be addressed by ABGC and/or BQ promoting the need for record keeping, in advance of TR4 spreading.

Grower interaction

Grower voluntary participation in this project was lower than ABGC anticipated. Also, growers were initially difficult to engage, but the on-farm discussions, whether Biosecurity Plan related, or in general, were well received.

These responses indicated the social and emotional effects that Panama has had on banana industry. Some growers in the region are worried about their farm eventually getting TR. Others are complacent about the risk.

Also, some uninformed ideas have thrived with some growers sceptical of TR4 presence, as spread had not progressed as initially indicated.

The growers visited had good farm-biosecurity in place, but generally poor records.

In addition, the costs of potential BQ requirements for farms with TR4 would best be considered in advance. That is, an advantage to a grower of developing a Biosecurity Plan, before TR4 is detected, is that he/she could consider the options in advance, e.g. there are cheaper ways of moving fruit from a block than building and using wash-down and drainage containment facilities at its exit point.

Growers also noted concern with the uncontrolled movement of pallets between States.

DAF relationships

The relationship developed with DAF research and extension staff and BQ staff previously made this role a seamless one. Meetings were held with these groups to keep them informed of my activities and grower issues in addressing the Biosecurity Plan, which are ongoing.

Sharing the process, Biosecurity Plan Template and issues of this project with the DAF extension team and ABGC was important, so that this work is integrated into to their TR4 project activities, and also so that any follow up questions from growers could be addressed.

Recommendations

Recent information from overseas experts, who have dealt with Panama outbreaks indicate that TR4 will eventually spread. For this reason, ABGC:

- Should publicise the need for Biosecurity Plans and encourage additional growers to develop their individual ones.
- Develop templates for the Biosecurity Plan records to assist growers prepare for TR4.
- Develop and circulate a simplified version of the prescribed requirements of the Biosecurity Farm Management Plan to assist grower understanding of the legal obligations.

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- Continue to liaise with Biosecurity Queensland over its current review of the Biosecurity Plan “prescribed” measures.
- Investigate Biosecurity Plan cost sharing between grower, industry and government, which would encourage the next grower(s), who become TR4 affected to quickly put infrastructure in place that minimises TR4 spread on their farm(s), neighbours and industry.

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Further Assistance

Growers are encouraged to raise queries on this matter with Jim Pekin, CEO, ABGC: jim.pekin@abgc.org.au or phone 3278 4786

Appendix 1

The following is the relevant segment of the services contracted in this project.

1. The Services required of the Contractor are mainly to assist owners or operators of farms that at risk of being infested with Panama TR4 to develop their individual Farm Biosecurity Management Plan in advance of being required to do so (i.e before any more farms are placed under quarantine).

The Services specifically require the Contractor to assist a minimum of ten farm businesses* to understand and document how they will address the Biosecurity Queensland regulatory requirements, if later found to be infested.

*An individual farm business may have two or more farms supplying the one packing shed.

2. The Services required of the Contractor are also to ensure all transport operators visiting banana farms are carrying out best practice on-farm biosecurity.
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Appendix 2

Routine, direct and immediate movement of banana fruit, on picking trailers, between separate parcels of affected land on or across public roads

The following are some options for moving fruit on trailers if from an infested farm, that are likely to be accepted by BQ.

They are innovative adaptations of the prescribed measures shown on p17 and 18 of the attached Biosecurity Plan Template. Most elements below (except those in bold) are currently prescribed in S12D of the Biosecurity Manual on "Routine, direct and immediate movement of vehicles, appliances and other things between closely separated parcels of affected land.

Option 1 and 2 are about moving fruit on picking trailers regardless whether a "points" system is used or not. Option 1 is ensuring the trailer is clean, so it will need to be washed first. Options 2(a) and (b) is where the trailer is moved when dirty.

Option 2 (a) is where the soil on a trailer is captured, while travelling between banana blocks and returned to the block where the soil originates.

Option 2 (b) is where the soil on the harvest trailer is captured while travelling between blocks and when it arrives at the packing shed, is washed off, contained and disinfected with a Quaternary Ammonium product.

Movement of a picking trailer that has been in contact with TR4-affected soil, on or across a public road separating parcels of affected land, is prohibited unless the item fulfils the requirements of either option 1 or option 2 below:

Option 1

1. an authorized officer is advised, in advance, of the requirement to move the harvest trailer between parcels of the affected land and details of the movement; and
2. is free of soil and banana plant material; and
3. has been decontaminated and inspected by a suitably experienced person, to ensure that the trailer is free of soil and plant material; and
4. is disinfected by a produce known to effective against Panama TR4; and
5. the trailer is dealt with, after decontamination, in such a way to prevent cross contamination before transit; and
6. the movement of the trailer must be carried out with the prior notice to and in the presence of an authorized officer or their delegate; and
7. the movement procedure has prior approval of an authorized officer, is documented, dated, signed by both parties; and
8. moved directly between separate affected parcels of land using the most direct route appropriate for the movement without pause or deviation.

Option 2 (a)

1. an authorized officer is advised in advance, of the requirement to move the trailer between parcels of the affected land and details of the movement; and
2. the trailer has been transferred across a set of “points” from the “dirty” farm zone, where the harvest trailer base and wheels remain, to a “clean” loading site on the access road; and
3. the access road is fenced, raised with gravel base and drained
4. is dealt with, in such a way to prevent cross contamination before transit; and
- 5. is contained in transit so that soil that dislodges while in transit is securely held and cannot move outside the container; and**
6. the movement of the trailer must be carried out with the prior notice to and in the presence of an authorized officer or their delegate; and
7. moved directly between separate affected parcels of land using the most direct route appropriate for the movement without pause or deviation; and
- 8. the dislodged soil in the container vessel is transferred back to and disposed on the farm “dirty” zone where the bananas were transferred from; and**
9. the banana movement procedure **and return of waste/soil to the original farm** has prior approval of an authorized officer, is documented, dated, signed by both the transferee and authorized office or their delegate.

OR

Option 2 (b)

1. to 7. is as above

- 8. the trailer on entry to the packing shed is held at a site which is bunded to contain soil and wash down water; and**
 - 9. the transfer vehicle “container vessel” is washed into a bunded area and the resulting soil solution is contained in a sump and treated with a disinfectant effective against Panama TR4, then disposed onto a grassed open area to allow the disinfectant solution to breakdown, before entry into drains or waterways.**
 - 10. after the fruit is hung, the harvest trailer is washed clean, spray disinfected and the resulting soil solution is contained in a sump and treated with a disinfectant effective against Panama TR4, then disposed on a grassed open area to allow the disinfectant solution to breakdown, before entry into drains or waterways.**
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Appendix 3

Routine, direct and immediate movement of banana fruit, between separate parcels of affected land on or across public roads

A further potential option for moving fruit across or on a public road is described below.

This is an adaptation to the prescribed measures shown on p17 and 18 of the attached Biosecurity Plan Template. Most elements below (except those in bold) are currently prescribed in S12D of the Biosecurity Manual on “Routine, direct and immediate movement of vehicles, appliances and other things between closely separated parcels of affected land.”

Movement of banana fruit, that has been grown on the affected land, on or across a public road separating parcels of affected land, is prohibited, unless the item fulfils the requirements of outlined below:

1. an authorized officer is advised, in advance, of the requirement to move the banana fruit between parcels of the affected land and provided with details of the movement; and
 2. the fruit bunches and fruit bags are free of soil; and
 3. has been inspected by an experienced person, to ensure that it is free of soil; and
 4. **the fruit is hung and transferred across from the “dirty” farm zone to the “clean” zone to avoid soil contact and contamination; and**
 5. **the fruit is hung in a container, in such a way to prevent cross contamination during transit; and**
 6. the fruit movement procedure has prior approval of an authorized officer, is documented, dated, signed by both parties; and
 7. fruit moved directly between separate affected parcels of land using the most direct route appropriate for the movement without pause or deviation; and
 8. the fruit is transferred into the packing shed from the “clean” zone to the packing shed spray washed and de-handing, in such a way to prevent cross contamination; and
 9. the banana fruit movement procedure has prior approval of an authorized officer; and
 10. is documented, dated, signed by both the transferee and authorized office or their delegate.
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In regard to point 4 above, growers may consider other ways of moving fruit, such as via cableways. The important thing is that the fruit is cleaned of soil before exiting the block and remains free from soil.

Appendix 4

Questions Relating to Movement of Machinery

Some growers who participated in this project asked the following questions. Responses to them from BQ are in shaded italics.

1. Clean access roads

Does this road need to be blue metal or heavy builders' gravel or can it be constructed of river gravel?

Some farms have river gravel entrance roads which growers consider to be clean or part of the public road as long as it fenced and well drained with no crossover farm traffic. Also, many of the regional roads are river gravel on which growers and fruit harvest vehicles travel.

Any road building material is acceptable, if it provides a separation between the property's pre-existing soil as a road material and the clean zone (top of the road), this includes the ensuring that no soil below the top road material seeps through to the top road material. Ongoing monitoring and maintenance will be required to ensure the road is maintained to the clean standard.

2. Use of a Disinfestation Shuttle or Dip

Many growers have a shuttle for disinfestation spraying at the farm entrance/exit, e.g. for truck access to the packing shed. Is this sufficient for an infected farm?

Could this shuttle and spray rig be replaced with a drive-through dip using the same Sterimax-type disinfectant?

The critical element is to ensure that soil and plant material is removed prior to disinfection. Whatever mechanism is adopted an inspection process is required to ensure that the soil and plant material free status is achieved (then disinfected) prior to leaving the Affected Land (an IP).

3. Using Roll-on Roll-off Trailers

Consider a harvest trailer truck that drives off one farm or block after being disinfected, drives on the main road, then enters another farm block, but remains on the "clean" fenced and drained access road, and is loaded by a slide on points system: Can it drive back on the public road to the packing shed or does it need to be firstly washed down and disinfected, before entering the public road?

Any appliance that has been in contact with the Dirty Zone on the Affected Land (IP) must have all soil and plant material removed and then disinfected prior to being able to leave the Affected Land (IP). This includes any roll-on roll-off picking trailers.

4. Dismantling machinery so it can be moved off an infested farm

In the Biosecurity Manual (and which is similarly mentioned in the attached Biosecurity Plan Template, attached): what is meant by machinery having to be “dismantled to the extent necessary for thorough cleaning, decontamination and inspection” and to what extent is this necessary for continual road crossings?

The critical element is to ensure that soil and plant material is removed prior to disinfection and this can be a complex procedure that may require dismantling to ensure the soil and plant material free status. This process may take significant time to achieve. To assist growers, it is recommended that newly infected premises (IPs) would dedicate time to the following:

- *Reviewing their machinery that routinely leave the farm to identify if there is a process/ system that could be implemented, so some or all machinery no longer needs to leave the farm; and/or*
- *Considering thorough initial cleaning of machinery that will need to leave the farm. That machinery may have gross contamination material (e.g. soil) accumulated over time and become compacted. So, an investment in time cleaning at the beginning will make it easier for future cleaning activities to more readily achieve the clean standard; and*
- *Putting processes in place to prevent contamination: like sealing up small places where soil may be difficult to remove; like education for harvest crews so no leaf material is left on roll-on roll-off trailers; like installing mud guards over wheels to reduce the contamination on the underside of the roll-on roll-off trailers.*