



Discussion Paper

PANAMA TR4 PROGRAM TRANSITION

Entering a new era: This Paper has been developed to be read by banana growers in advance of conversations with ABGC on the transition of the Panama tropical race 4 (TR4) Program from government to industry leadership.

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Australian Banana Growers' Council
PO Box 309, Brisbane Market, Rocklea, Qld 4106

Discussion Paper – Panama TR4 Program Transition

Summary

The current Panama Tropical Race 4 (TR4) Program is entering a new era and the way it is being delivered will need to change. The objective of this Discussion Paper is to inform growers that the TR4 Program is transitioning from government to industry leadership and, consequently, the ABGC will be making decisions that will change the size, structure, and priorities of a new-look TR4 program. Importantly, ABGC is seeking the views of growers on issues that are important to them and that will give them confidence in the future. This Paper has been developed to be read by banana growers in advance of conversations about the transition with the ABGC team.

Please look at the questions contained within this paper and consider what responses you would like to provide back to ABGC.

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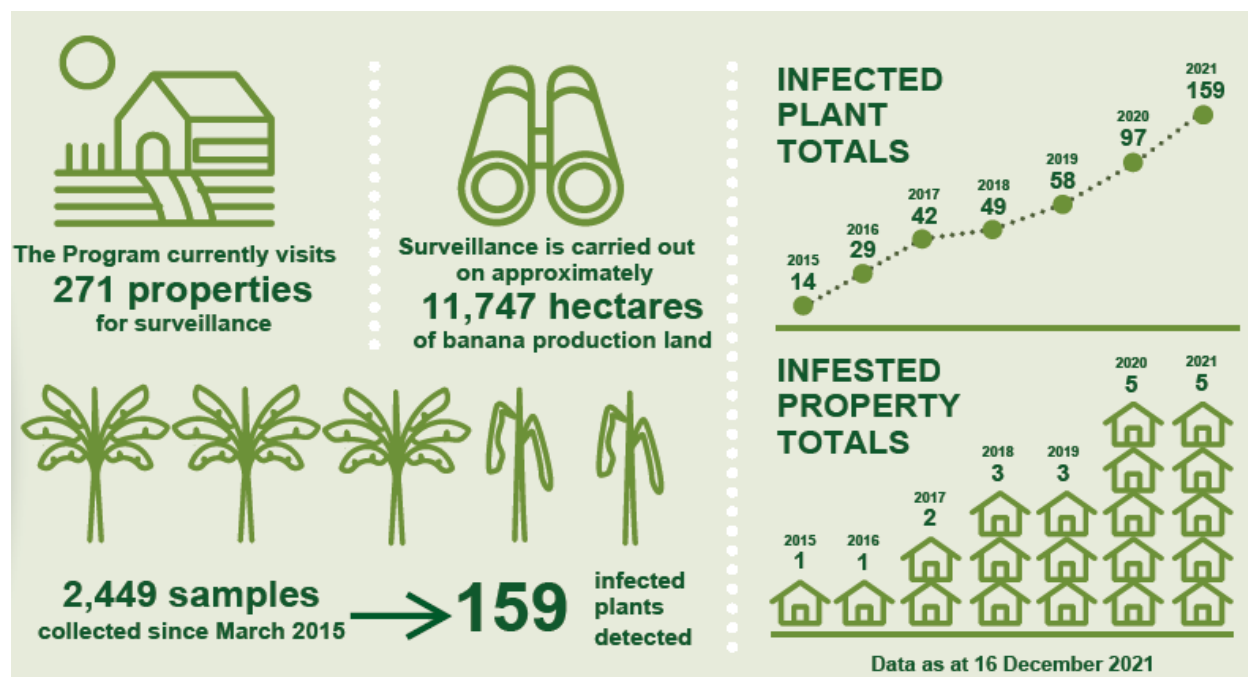
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The risk paid off

It has been a turbulent time for banana growers since TR4 was detected in the Tully Valley in March 2015. Nearly seven years on, there are only four infected farms, apart from the first one. The risk the industry took to purchase the first infected farm and close it down has clearly paid off. That decision, along with the success of the Biosecurity Queensland (BQ)-led TR4 Program, has bought valuable time for growers in far north Queensland to better understand the disease and how it spreads. Many growers have implemented effective on-farm biosecurity and made other farm management changes. The industry is investing in research that is developing TR4 resistant varieties and soil management through research and development levies. Growers have also openly engaged with the control and containment efforts that are delivered by BQ through the TR4 Program. The slow spread of the disease could not have been achieved without the commitment of far north Queensland banana growers and the Queensland Government. The successful management of TR4 to date is widely recognised and is being watched by many banana growing regions across the world.

The status of the TR4 Program, including the cumulative number of infected plants is in Figure 1.

Figure 1. TR4 situation at 16 December 2021.



A new era

The government process in response to the initial TR4 detection in 2015 was to run an Emergency Response. That phase then changed into a Managed Response phase, where the Queensland Government invested in the biosecurity elements of surveillance, tracing, sampling, diagnostics, policy and planning, risk analysis, communications, and compliance – all critical elements of a successful control and containment program.

In 2018, the Queensland Government engaged consultants ACIL Allen to undertake an independent review of the Program. As a result of the review, and because the disease cannot be eradicated and will continue to spread, the Government announced it would gradually withdraw funding and transition the leadership responsibility of the TR4 Program to the ABGC. ABGC has endeavored to keep growers informed about this through articles in the Australian Bananas magazine, regular e- bulletins as well as through face-to-face meetings.

The Managed Response phase moved into the Transition to Industry Management phase in 2020, following the signing of a Memorandum of Understanding (MOU) between the Queensland Department of Agriculture and Fisheries (DAF) and ABGC on 1 July 2020. It is an agreement to work together to deliver the TR4 Program of control and containment until June 2023. Part of the MOU noted ABGC's increased responsibilities for the operational delivery of the Program to commence from 1 July 2021 to 30 June 2023. ABGC believes there is still a significant opportunity to protect the industry and continue to slow the spread of disease. It is now planning, with the help of BQ, to design and implement a new TR4 Program that it will lead from 1 July 2023.

In April 2020, the Panama TR4 Program Management Board was established to govern the strategic direction of the Panama TR4 Program until 2023. The Board - made up of equal government and industry representation - make key decisions on the future management of the Program and ensures the Program continues to run effectively and efficiently. Banana growers are represented on this Board by Stephen Lowe (Tully grower and Chair of the ABGC), Andrew Serra (Mareeba grower and Director of ABGC) and Jim Pekin (CEO, ABGC). The Department of Agriculture and Fisheries (DAF) representatives are Malcolm Letts (Deputy Director-General & Chief Biosecurity Officer), Lynne Turner (General Manager Horticulture & Forestry Science) and Mike Ashton (General Manager, Plant Security & Product Integrity).

The Budget will determine the New Program

In July 2020, DAF and ABGC also signed a Cost Sharing Deed that committed both parties to funding the Program to June 2023, with ABGC's share to be from the Banana Plant Health Australia (PHA) Levy.

Table 1 outlines the relative contributions of Industry and government to running the Program during the transition phase, as defined in the Cost Sharing Deed.

Table 1. Cost sharing contributions for Panama TR4 Program during transition.

Financial Year	2019/2020	2020/2021	2021/2022	2022/2023	2023/24 & Beyond
ABGC share	10%	25%	40%	50%	100%
ABGC dollars	\$400,000	\$1,000,000	\$1,600,000	\$1,600,000	\$1,600,000
DAF share	90%	75%	60%	50%	0
DAF dollars	\$3,600,000	\$3,000,000	\$2,400,000	\$1,600,000	0
Total	\$4,000,000	\$4,000,000	\$4,000,000	\$3,200,000	\$1,600,000

The Banana PHA levy is a compulsory levy that is collected from all commercial banana growers across Australia. The levy rate is 0.50c per kilogram of bananas sold. This rate was approved by all growers in 2016 when funds were needed to purchase the first infested property. ABGC plans to continue to use \$1.6m per annum of the PHA levy to fund the delivery of the TR4 Program beyond July 2023.

In recent years, the Program has cost the Queensland Government approximately \$4m per annum. As the PHA levy generates \$1.6m per annum, the new TR4 Program is being designed to fit to the available budget. The ABGC Board is not proposing that the levy be increased when the ABGC takes responsibility for the TR4 Program.

In a nutshell, the ABGC will be delivering a program on 40% of the historical budget and is keen to hear from growers about what aspects of the current Program has made the biggest impact in containing the disease. We want to make sure we design the Program in a way that growers' priorities are recognized and included.

The ABGC does not underestimate the many challenges associated with transitioning the current Program to industry leadership. The ABGC needs grower support and input to shape a new, smaller program that will help the industry continue to manage the disease until a new disease-resistant variety is found. Growers will also need to take on more responsibility such as continuing to implement and maintain their on-farm biosecurity practices. This is the best way to contain TR4.

The reduced budget for the new Program from July 2023 will mean a significantly smaller number of staff and a refocused approach to the range of work delivered and how it is delivered. For example, the current Program is divided into seven distinct functions (and business units) to deliver the Program's objectives (shown in Figure 2), but ABGC is planning for some staff to work across functions. The relative budget for each of the current Program's functions is in Table 2.

Figure 2. Panama TR4 Program elements – current



Table 2. Relative budget of current Panama TR4 Program functions

Panama TR4 Program elements - current	
	Approx budget %
Program management	10
Business support	10
Communications	10
Laboratory Diagnostics	10
Policy and Planning	12
Transition to Industry	4
Operations (total)	44
Total	100

A new-look TR4 Program

There are several functions of the existing program that will be reviewed and changed as the new, reduced budget will not stretch far enough to cover the current level of resourcing for the range of activities. The ABGC is currently developing a plan for the structure and staffing levels of a new Program. Currently there are approximately 30 full time equivalents working in the Program and ABGC is planning on approximately 13 instead.

Each change to the current Program will have an associated risk and it is important for the ABGC to understand what level of risk growers consider to be acceptable. Complete consensus amongst growers on this issue is unlikely to be achieved but the ABGC will do its best to navigate the range of options and design a Program that gives confidence to all growers.

There are also other elements of the overall TR4 control and containment strategy which has been led and managed by the ABGC such as feral pig management, which are best included in the new Program. There is an ongoing commitment by the ABGC to work closely with growers to help reduce feral pig numbers in the Tully Valley, to limit the risk of spread of TR4 via this vector

The ABGC is very keen to hear your thoughts on the topics that are explored in greater detail throughout this Discussion Paper. There are questions at the end of each section for you to consider and prompt your thinking.

Changes to biosecurity regulation: a Code of Practice

Under the ABGC-led Program, a major change will be required to the way biosecurity regulations are currently applied. From 1 July 2023, BQ will not issue a *Notice of presence of Panama disease tropical race 4* to farms that become infected with TR4. These Notices are currently issued by Inspectors under the *Biosecurity Act 2014*. A Notice is a legal and very detailed biosecurity document that describes the conditions that each property owner or manager must comply with in order to prevent the spread of TR4 from that infested property. Each Notice reflects the individual circumstances of each infected farm and require significant resources to create and maintain. Appendix 1 discusses the main elements in the current Notice.

The ABGC will not have the number of staff necessary to design and issue Notices for every newly infected farm – nor the resources to ensure compliance to all the provisions of the Notice. Instead, there needs to be a system in place that will slow the spread of disease while being flexible to administer, easily understood and complied with, and able accommodate the inevitable spread of the disease to other farms. After careful consideration of all the options available, ABGC (and the TR4 Program Management Board) believe a Code of Practice is the best means to achieve these outcomes.

An expert has been employed to draft the Code of Practice that will replace the Notice as the framework to describe the conditions that will apply to infested properties. . The Code will be developed in close consultation with a small group of growers and ABGC. Our aim is for it to contain both mandatory biosecurity practices that must be implemented on infested properties as well as practices that will be strongly encouraged for all growers to undertake to reduce the risk of the disease spreading onto their farm. This is because responsibility for implementing on-farm biosecurity practices and protecting the industry from the further spread of TR4 is every grower’s responsibility. Legally this is known as your General Biosecurity Obligation and is described in the *Biosecurity Act 2014*.

Work will commence on drafting components of the Code in January and will continue during 2022. There will be extensive opportunities for growers to provide comments to the ABGC on the draft Code. The Code, once finalized, will be available to all growers to help them understand what will be required for infested farms and recommended for all banana farms.

ABGC recognises that much of the financial burden for containing TR4 falls on current and future infested properties (IPs). The mandatory provisions that are to be put in place under the Code need to also provide the opportunity for those IP owners to continue to farm their land.

Code Questions:

- 1. What are the three most important provisions that you think should be placed on infested properties to stop the spread of TR4?**
- 2. What are some voluntary, best practice provisions that should be contained in the Code of Practice for application industry-wide?**
- 3. Who should be responsible for funding and delivering enforcement of the mandatory provisions once a farm is proven to be infested?**

Surveillance

The 2021 Epidemiological Review¹ clearly stated that early detection and quick destruction of diseased plants before they release inoculum into the soil is crucial for the management of TR4.

Early detection is achieved through the current TR4 surveillance strategy by prioritizing infested and high-risk farms, as shown in Table 3. The surveillance strategy also aims to provide confidence on areas free of disease by performing surveillance on the remainder of the banana farms in Far North Queensland.

¹ See Appendix 2

Table 3. Panama TR4 Program surveillance schedule 2021-22.

Surveillance schedule 2021-22	
Panama TR4 infested properties (IP's)	Every 8 weeks
Tully Valley properties (high risk)	Every 3 months
All other FNQ commercial banana properties (at risk)	Annually

Surveillance is currently undertaken by trained BQ officers walking along banana rows plants looking at plants both in that row and in the two rows each side of it. Approximately 20% of the total Program budget is spent on surveillance.

In designing the new Program, ABGC has reflected on the Epidemiological Review and the many conversations with growers who have said they value a proactive surveillance program. Growers consistently say regular surveillance gives them peace of mind. ABGC is keen to continue to give this confidence to the industry. However, elements of the current surveillance strategy will need to change due to the reduced budget. There will be a trade-off between the surveillance efficiency and the available budget. The ABGC must also consider the likelihood of TR4 being present but not yet detected elsewhere in the industry and the consequences of such detections.

Some suggested changes to the current surveillance method include:

- Making less frequent visits to all Far North Queensland banana farms regardless of risk status (ie, infested properties, high-risk, at-risk).
- Changing the scheduled surveillance frequency for some risk status farms
- Walking less rows on farm or not walking all banana blocks of a farm each visit
- Using, with permission, growers' quad bikes, or side-by-side vehicles to increase efficiency, by speeding up the rate at which surveillance could then be completed on a property.

ABGC is proposing to spend more of the total budget on surveillance than now. These ABGC staff members will be 'authorized' under the *Biosecurity Act 2014*. This means that growers must let them onto their farms to undertake surveillance and sampling activities – just as is the case currently with surveillance officers employed by BQ. The ABGC staff members will be well trained to detect and sample for TR4 and will not move soil from one farm to another on their shoes, clothes, equipment etc.

As ABGC takes on responsibility for delivering the TR4 program, growers (and their staff) will also need to increase their contribution to containing the disease by proactively looking for suspect plants in between scheduled visits. While it is a shock to a grower to suspect they have TR4, early detection and quick infested plant destruction is imperative for the ongoing farm viability for that grower and the industry.

Growers who identify plants with symptoms of Panama TR4 on their farm will need to continue to report these and allow samples to be taken. The prompt reporting of suspect plants will continue to be a requirement when the Program is delivered by the ABGC.

Surveillance Questions:

1. Please identify what you think is the most important feature of a successful surveillance strategy?

- Frequency of farm visit**
- Type of farm visited (infested, high risk or at risk)**
- Inspections based on walking rows or paddock boundaries**
- Number of rows walked by surveillance officers**
- Other features.**

2. In the lead up to July 2023, would you benefit from having refresher training on Panama TR4 detection for your staff, delivered by BQ?

Sampling and Diagnostics

Detection of TR4 relies on the presence of symptomatic plants. There is no other way to detect the presence of the disease. Symptoms similar to TR4 are expressed by other conditions, such as bacterial corm rot disease (Erwinia), so it is important for sampling and diagnostic testing to occur so that the spread of disease can be managed. As of 16 December 2021, the laboratory had examined 2449 samples with 159 returning a positive result. Laboratory diagnostics currently account for 10% of the Panama TR4 Program's budget.

Currently sampling is done by the TR4 Program as soon as possible once a symptomatic plant has been identified. The banana plant is inspected internally and where internal TR4-symptoms are observed, a sample is taken for laboratory analysis. The sample is taken by trained staff from BQ with strict adherence to a sampling protocol that documents the site of the plant, the farm details and the steps it takes to move the sample to the laboratory in Brisbane. This is to ensure there is an absolute certainty of the source of sample should it test positive. The sample is sent to the accredited Plant Biosecurity Laboratory in Brisbane for testing by polymerase chain reaction (PCR) which takes two weeks to get a result. The PCR test is then followed by a vegetative compatibility group (VCG) test.

Due to advances in diagnostic technology, experts believe the PCR test protocol is now as accurate as the VCG test for diagnosing Panama TR4, with the added benefit that the faster response time means there can be better inoculum management through earlier destruction. As a result, the TR4 Program is implementing the TR4 Board's decision for destruction at a positive PCR test, as opposed to after the VCG test. This would apply to existing infested properties who would be able to destroy infected plants up to four weeks earlier without having to wait for VCG results.

Under the ABGC led program, the surveillance staff will be trained to take samples from suspect plants. The samples will continue to be diagnosed in the laboratory in Brisbane.

Sampling and Diagnostics Questions:

1. Should the industry fund the diagnostics costs that determine the presence of TR4?

2. Should samples from known infested properties continue to be taken and sent to the laboratory for analysis?

Destruction

Prompt destruction of infected plants and those surrounding them is integral to effective control and containment of the disease. Limiting the production of inoculum due to early destruction of infected plants severely limits the potential for disease to spread.

At this point in time, the current destruction protocol is deemed the best way to prevent the spread of spores and limit inoculum build up. When the grower is notified of a positive test result, they must destroy the sampled infested plant and surrounding plants. The current destruction zone dimensions are three rows of banana plants wide (the infected plant being in the middle row) and 20 metres in length (10 metres in each direction from the infested plant). This area is then treated with urea and fenced to limit access and movement of soil. Each destruction zone (approximately 10m x20m) is costly – including a significant cost for labour, animal proof fencing materials, urea, plastic sheeting, irrigation reconfiguration and modifying management practices.

There is no question that the Program’s current destruction requirements, which are based on current scientific knowledge, provide significant benefit to the broader industry. However, they can be very onerous for growers who are farming with the disease. It is estimated that each destruction zone costs approximately \$2,500. Furthermore, some infested property owners have voluntarily chosen to destroy entire banana blocks, not just the required 10m x 20m area to protect the ongoing viability of their farm

Depending upon the industry’s appetite for risk, it is possible to change the way in which the disease is managed on a farm. For example, it may be possible to change the size of the destruction zone, or the animal-proof fencing requirement for destruction zones. The destruction protocol is one of the most important elements of a TR4 program to prevent disease spread.

Research on the destruction protocol was commissioned by the TR4 Program Board at its December 2021 meeting. This includes:

- herbicide use and its impact on inoculum
- alternatives or additional biosecurity measures
- what opportunities exist to further control inoculum levels
- root to root contact of plants within the destruction zone
- the optimum quantity of urea to be applied to destruction zones

ABGC will use the results of this research when available and in the meantime, we are keen to listen to growers about the practicalities of minimizing the risk of disease spread through destruction protocol while still farming profitably. The current protocol could also change if the disease spreads further over the next few years. We need to strike the right balance of practicality and risk.

Destruction Protocol Question:

1. What views do you have on a future destruction protocol?

Grower information

To deliver a TR4 Program, the ABGC may need to access private information that growers have previously given to the TR4 Program. While the ABGC already has grower details such as name, address, farm location etc. through past consultation on the introduction of the research and development, marketing and biosecurity levies, as well from ABGC Membership applications, it does not have access to other details held by the current Program such as the scheduling of surveillance visits. BQ has collected information from growers specifically for the purpose of determining TR4 presence on farms. Some of this information may be beneficial to ABGC – to make the Program delivery more efficient.. Currently the *Information Privacy Act 2009* requires BQ to obtain each grower’s consent in order to share this information.

ABGC is currently assessing what type of grower-related information (if any) might help run a more effective program and as a consequence, you may be asked to approve the transfer of some of your information. This transfer cannot happen without your explicit approval. If the transfer is deemed to be essential, and approval is granted, the ABGC will hold your personal details in a secure database and not release them to any other party. This is how the ABGC currently operates in relation to all members’ details.

Accountability

ABGC is very aware that there could not be a TR4 Program without the financial commitment of growers – paid through the PHA levy. There is enormous responsibility that comes with running a program of this size and importance. The ABGC will be accountable to all growers across Australia, as well as to PHA, for the responsible allocation and use of the budget. The ABGC is committed to providing growers with regular written reports so that all growers can see the costs associated with running this new TR4 program. There will be more information about the ways in which ABGC will report information to growers provided in the coming months.

ABGC will continue this biosecurity and transition conversation with growers over the next 18 months during the transition to ABGC running the new Program independently. In addition to the design and implementation of a new Program there is also the drafting of the Code of Practice that will greatly benefit from grower input. ABGC will be engaging with growers in small group meetings that will kick off in February 2022. At these meetings we hope to get your views on the topics raised in this Discussion Paper as well as any other issues, concerns, or questions you want to raise about TR4.

Geoff Wilson is the ABGC’s Industry Transition Leader, funded by the TR4 Program, who has responsibility for leading the grower engagement. The ABGC Board, CEO, and senior staff will also be involved in the consultation process. Keep an eye out for information in ebulletins confirming meeting options in early 2022. Geoff is also keen for individual meetings if you are unable to join the small group sessions. Geoff can be contacted on 0418 644 068 or by email geoff@abgc.org.au.



GEOFF WILSON
INDUSTRY TRANSITION LEADER

The Future

As the leadership of Panama TR4 management will transition to industry in 2023, effective and practical solutions are necessary for the future. Everyone will need to step up to confront biosecurity challenges in one form or another. Growers should protect their farm at the gate and continue to design, review, and implement their on- farm biosecurity plan as this is their strongest asset in the fight against TR4.

The Queensland Government will continue to support the industry through at least delivering Hort Innovation funded R &D projects such as the National Extension Project and research into Panama TR4 resistant varieties. ABGC plans to provide evidence to the Queensland Government that industry is prepared to shoulder the majority of the new TR4 Program costs going forward. We also plan to formally detail our funding request of Government for Biosecurity Queensland to continue to have a role, albeit a small one, in assisting the industry and Far North Queensland communities contain TR4.

ABGC, for our part, is confident we will continue to contain TR4 through an ongoing partnership approach with growers and Government.

Appendices

Appendix 1 - Sample Notice summary

The following elements are included in the current “Notice of presence of Panama disease tropical race 4 (Notice), as risk minimization processes and procedures, with specific requirements and necessary actions. A more complete guide is available at

[17.+Full+guide+to+the+notice+of+presence+of+Panama+TR4.pdf \(squarespace.com\)](#)

- 1 Restricting access to the affected land
 - natural or built barriers and signage to deter access by unauthorized vehicles and people.
- 2 Zoning
 - maintain clearly defined and separated areas (destruction, dirty and clean zones) to minimise spread of the disease.
- 3 Decontamination sites
 - dedicated areas for cleaning and disinfecting items (such as vehicles, tools)
- 4 Movement of risk items from dirty zones
 - all risk items must be decontaminated before being moved from the dirty zone, to not contaminate clean zones or land not subject to a notice.
- 5 Movement of fruit for human consumption from affected land
 - ensure all fruit is free of soil and plant material before leaving the property
- 6 People movement
 - limit the movement of soil and plant material from dirty zones by people and their personal equipment or items.
- 7 Waste management
 - manage waste from the dirty zone to minimise the risk of disease spread
- 8 Maintenance of destruction zones
 - maintain established destruction zones so that they are free of banana plants and remain undisturbed
- 9 Record keeping
 - keep records that detail how the risk minimisation processes, and procedures of the notice are being met.
- 10 Weed control
 - restrict soil movement from the dirty zones during weed control activities.
- 11 Emergency access
 - plan with emergency service providers the procedures to follow for emergency access to the property
- 12 Earthworks
 - ensure that soil and water from dirty zones does not enter clean zones during new earthwork activities
- 13 Farm-based animal movement

- farm-based animals are managed in a way that minimises the movement of soil and plant material from dirty zones

14 Irrigation removal

- manage used irrigation hardware from the dirty zone in a way that minimises soil disturbance and is disposed of in a way that minimises the biosecurity risk

Please note:

Other sections may be included in the notice depending on land use (such as mixed cropping, cattle production) and operational activities.

More detail is available in the sample Notice:

[Sample Presence of Panama TR4 notice - Panama disease tropical race 4 Grower Kit | Publications | Queensland Government](#)

Appendix 2 – References

1. 2021 Panama TR4 Epidemiological Review:
<https://abgc.org.au/2021/09/21/elementor-11588/>
2. Status of new variety research:
<https://abgc.org.au/2021/09/16/first-ratoon-results-from-the-tr4-variety-screening-trial-in-the-northern-territory/>
<https://abgc.org.au/2021/05/01/first-ratoon-variety-results-at-south-johnstone/>
3. Banana Best management Practices:
<https://www.horticulture.com.au/growers/help-your-business-grow/research-reports-publications-fact-sheets-and-more/banana-best-management-practices-on-farm-biosecurity-manual/>