

Factsheet

Managing Planting Material

Introduction

As there are no control measures available for Panama TR4 implementing a range of on-farm biosecurity practices is essential to reducing the likelihood of Panama Tropical Race 4, or any other pest or disease entering your property. As with all aspects of on-farm biosecurity, you should first focus on how you can exclude people, machinery, vehicles or equipment, before you think about treating them. By following the process of **Assess, Identify, Implement, Inform** you are well on your way to implementing effective biosecurity exclusion strategies. Using planting material from known uninfected sources is integral to managing disease risk pathways onto and off your farm.

Sourcing clean planting material.

Using known clean planting material is a way to add layers to your biosecurity regime. There are a number of pathogens known to be transferred between banana plantations in bits and suckers. Panama TR4 is one of them. Spores will not only be harboured in surface dirt, but also in the tissue of the planting material itself. Using planting material from a known clean source greatly reduces the chance of your property becoming infected. Tissue culture plants are a good option so long as tube stock are potted into clean medium, are irrigated with clean water and do not become infected during transit. Tissue culture facilities are regulated and audited to ensure biosecurity measures are properly implemented. Sourcing bits and suckers from a nursery established on your own property from known clean material reduces the risk of bringing the disease in from outside farms.

- Avoid using planting material from unknown sources. You do not know if plant itself or the soil from where it originated is infected or not.
- Suckers from infected plants may look relatively green and healthy compared to the mother plant. Do not use these suckers as there is likely to be spores harboured in the tissue.
- A safe source of planting material are bits and suckers from your own uninfected property. Establishing a nursery from known clean material and deriving bits and suckers from it for planting is a safer option.
- The Panama TR4 fungus cannot make it through the tissue culture process. All plantlets will be free of the disease. Infection may only be transferred through unsanitised pots and potting mix, infected irrigation water or cross contamination during transit.
- QBAN administers the accreditation and auditing of Tissue culture suppliers. Make enquiries regarding a suppliers credentials and disease free status before sourcing planting material of any kind.

Summary

The movement of infected planting material around the world through human activity has caused widespread devastation of plantations in many banana producing countries. The vegetative propagation of the banana plant is relatively easy and as such, diseases found in bits and suckers are rapidly spread across local districts through the sharing of planting material. Sourcing safe planting material is paramount as Panama TR4 persists in the environment for decades. **A key element of using disease free planting material is that it creates a biosecurity system that is layered. By having a layered approach to biosecurity, it spreads the biosecurity risk across a range of measures, as no single biosecurity practice is 100% effective, 100% of the time.**



Figure 1: Panama TR4 has spread internationally through the movement of infected planting material. As people have become more mobile, so has the disease.



Figure 2: Never use bits and suckers from suspect plants or plants from suspect areas. Panama TR4 spores may be harboured on surface dirt and in the tissue.



Figure 3: Suckers of diseased plants may look relatively healthy. They are still capable of harbouring spores and can infect new plantings..



Figure 4: The tissue culturing process prevents the transfer of the *Fusarium oxysporum cubense* fungus that causes Panama TR4 from parent sucker material to daughter plantlets sold to growers.

