



PANAMA DISEASE TROPICAL RACE 4 RESEARCH UPDATE

Quaternary Ammonium products aid in the management of *Foc*

Screening of disinfectant products for their efficacy against Panama disease (*Fusarium oxysporum* f.sp. *cubense* – *Foc* Race 1) has resulted in products that growers can use or apply as part of their on-farm biosecurity. Testing is on-going against the Tropical Race 4 (TR4) strain in the Northern Territory, however results so far have been comparative. A number of products already have registration as general purpose disinfectants.

Quaternary ammonium (QA) products containing 120g/L of the active didecyl dimethyl ammonium chloride (DDAC – Path-X™, Steri-maX® or Sporekill®) or benzalkonium chloride (BA – Bactex CF® or Agriquat®) at ≥ 100g/L had the best activity against all spore types of *Foc*.

Things to remember:

- Remove **all** soil and organic matter before applying any disinfectant (a detergent based product can assist in this process).
- Use a DDAC (12% active) or a benzalkonium chloride with an active ≥ 10% (Table 1)
- Dilute the disinfectant product to a 1% solution (e.g. 10 ml product to 990 ml water)
- Products can be used in footbaths, drive-through dips or spraying farm machinery and equipment.
- Use products as per label specifications (contact times)
- If solutions become dirty, replace them.



Peter Trevor and Kathy Grice (DAF) assessing disinfectant against *Foc* R1



Clean equipment thoroughly before applying a disinfectant

Don't expect a disinfectant to be your only line of defence against Panama disease

Table 1. Products registered as disinfectants and their activity in the laboratory against *Foc* Race 1 and TR4 with soil added (1 g to 20 ml solution)

Category	Disinfectant names	Contact times – <i>Foc</i> R1			Contact times – TR4			
		≤ 30 sec*	5 min 24 hr	30 min	≤ 30 sec 24 hr	5 min	30 min	
Quaternary ammonium	DDAC (120g/L) (1:100 dilution)							
	<i>Path-X</i> TM	✓	✓	✓	✓	✓	✓	✓
	<i>Steri-Max</i> [®]	✓	✓	✓	✓	✓	✓	✓
	<i>Sporekill</i> [®]	✓	✓	✓	✓	✓	✓	✓
	Benzalkonium chloride (1:100 dilution)							
	<i>Bactex CF</i> [®] (100g/L)	✓	✓	✓	✓	✓	✓	✓
	<i>Agriquat</i> [®] (250g/L)	✓	✓	✓	✓	✓	✓	✓
Detergent based	<i>Farmcleanse</i> [®] (1:10 dilution)	✗	✗	✗	✗	✗	✗	✗

* ≤ 30 sec is the time it takes to process a sample and simulates the time to walk through a footbath or drive through a dip.

Screening of disinfectants against *Foc* R1 conducted by DAF researchers Peter Trevorrow and Kathy Grice and testing against TR4 conducted by Vu Tuan Nguyen (Department of Primary Industry and Resources – Northern Territory). There may be factors beyond the scope of this research that has been undertaken which have the potential to influence results. Please contact Peter Trevorrow or Kathy Grice on 07 4017 0770 for further information.