

# KVH Information Sheet

## Sanitisers



### Background

Appropriate hygiene measures must be taken to minimise the risk of transferring Psa from vine to vine or between orchards. Psa is easily spread through infected plant material. The disease can also be transferred through orchard machinery, pruning tools, equipment, harvest bins, clothes and vehicles which are not cleaned. Therefore orchard-hygiene practices are very important to help prevent the disease spreading.

The use of sanitisers after the removal of plant material is effective in killing any Psa present.

### Sanitiser use and effectiveness

When using sanitisers consider the following:

- Do they have proven efficacy against Psa? (refer to the product testing results table at the end of this document).
- Will the item to be sanitised come into contact with picked fruit? (i.e. picking bags, bins, fruit grading equipment). Ensure the product is food safe.

**NB:** DDAC-based compounds and other QACs (quaternary ammonium compounds) – such as benzalkonium chloride (BAC) are not permitted for use on surfaces that come into contact with fruit as these products can create residue issues within markets. It is recommended that post-harvest operators ask their sanitiser suppliers for an analysis certificate prior to purchasing sanitisers for use on surfaces which will come into contact with fruit.

- Does the product need to be Biogro approved? (refer to Biogro website [www.biogro.co.nz](http://www.biogro.co.nz)).
- Be aware of any health and safety risks associated with use (refer to Material Safety Data Sheet (MSDS) available from supplier).
- NB: Some sanitisers can be corrosive (refer to supplier for further information).

#### TO ENSURE EFFECTIVENESS

- Before spraying with sanitiser ensure all surfaces are free of debris e.g. soil and plant material.
- Application method, minimum times and rates of use in efficacy table must be followed.
- Change sanitising solutions frequently (e.g. in footbaths) as a build-up of organic matter may reduce the efficacy of the sanitiser product over time.

## Proven products commonly used

Trade names other than those listed below may also be effective against Psa if they have the same active ingredients. (refer to efficacy table at the end of this document).

Product Type &/ or active ingredients	Description & Trade names	Area for use					
		Hands	Facilities & work areas	Tools, Equipment and Machinery	Footbaths	Vehicles	Harvest Bins and picking bags
Broad Spectrum disinfectants	Virkon			✓		✓	
	Varicide <sup>2</sup>			✓			
	Envirosan			✓			
	Sterigene			✓			
Chlorine dioxide	Southwell AC, Hortisan, Biowash						✓
Household bleach <sup>1</sup>	e.g. Janola (unscented) (1:100 dilution)		✓	✓	✓	✓	✓
>70% alcohol solutions	e.g. Methylated spirits *			✓			
Disinfectant sprays	e.g. Dettol use label rates	✓	✓			✓	
Hand sanitiser	Gel, foam or liquid antiseptic solutions	✓					
Octanoic acid	Aussan L44*		✓	✓	✓	✓	✓
Bromo-chloro-dimethylhydantoin	Harvestcide gel		✓	✓	✓	✓	✓
Sodium hypochlorite	Nuron BioSafe*		✓	✓	✓	✓	✓
Natural botanical oils	ActiveClean Botanical*		✓	✓	✓	✓	✓
Weak organic acid – use label rates	Citric acid*		✓	✓	✓	✓	✓
Citrus extracts	Citrox14T		✓	✓	✓	✓	✓
	Citrox PWT		✓	✓	✓		✓

<sup>1</sup> Bleach solutions must contain 0.042% hypochlorite to be effective against Psa. For Janola, this means a 1% working concentration (a dilution of 1:100). For other bleach solutions check the label to determine the dilution required. **Janola breaks down over time so change the solution regularly if using long term.**

<sup>2</sup> For Varicide efficacy testing refer to [www.kvh.org.nz/vdb/document/657](http://www.kvh.org.nz/vdb/document/657)

\* Sanitisers suitable for use on organic orchards.

Full test reports are available on the following links:

- [www.kvh.org.nz/vdb/document/91553](http://www.kvh.org.nz/vdb/document/91553) (2013 VLS Disinfectant efficacy testing report)
  - [www.kvh.org.nz/vdb/document/91123](http://www.kvh.org.nz/vdb/document/91123) (2012 VLS Disinfectant efficacy testing report)
- [www.kvh.org.nz/vdb/document/91565](http://www.kvh.org.nz/vdb/document/91565) (VLS efficacy testing report for Aussan L44)

**General sanitiser products with tested efficacy against Psa-V**

Summary					Sensitive to		Spray Applied				Dip Applied			
Product tested	Active ingredient	Working Conc*	pH	Likely Residue?	pH	OM	Minimum time required for kill efficacy							
							Wood	Plastic	Tyre	Metal	Wood	Plastic	Tyre	Metal
<b>Citrox PWT</b>	Citrus pulp extract, water (demineralised), citric acid,	1%	6.4	No	NS	NS	10s	10s	NE	2 min	10s	1min	NE	2min
<b>Janola</b>	Sodium hypochlorite, sodium hydroxide	1%	8.4	No	NS	S	10s	10s	10s	10s	10s	10s	10s	10s
<b>H<sub>2</sub>O<sub>2</sub></b>	Hydrogen peroxide	3%	6.	No	NS	NS	10s	NE	2min	10s	10s	2min	NE	10s
<b>Teracep</b>	Paracetic acid (peroxyacetic acid), hydrogen peroxide	1%	4.8	No	NS	S	10s	10s	10s	10s	10s	30s	3s	10s
<b>Kiwilustre</b>	Phosphate buffered lactic acid	1%	4.	No	S	NS	10s	NE	NE	30s	10s	10s	10s	2min
<b>Extinct pure</b>	Chlorine dioxide	1%	4	No	NS	NS	10s	2min	NE	10s	10s	2min	NE	10s
<b>Citric acid</b>	Citric acid (100%)	3%	2.	No	S	NS	10s	10s	30s	10s	10s	10s	10s	10s
<b>Aussan L44</b>	Octanoic acid	0.3%	3.	No	-	NS	10s	10s	10s	30s	30s	30s	30s	1 min
<b>Harvestcide gel</b>	Bromo-chloro-dimethyl-hydantoin	0.1%	5.5	No	NS	NS	10s	10s	10s	10s	10s	10s	10s	10s
<b>Citrox 14T</b>	Citrus extract	1%	3.	No	NS	NS	1 min	1 min	1	30s	10s	1 min	1	30
<b>BioWash</b>	Chlorine dioxide	1%	8.	No	NS	S	1 min	2 min	NE	NE	2 min	2 min	NE	1 min
<b>Nuron BioSafe</b>	Sodium hypochlorite	0.1%	7.2	No	NS	NS	10s	10s	10s	10s	10s	30s	10s	10s
<b>ActiveClean Botanical</b>	Natural botanical oils	5%	4.5	No	NS	NS	10s	10s	10s	10s	10s	10s	10s	30s

NE= Not Effective, NS = Not Sensitive, S=Sensitive, B=Sensitive to basic conditions, OM = Organic matter

**Sanitiser products for use on non-fruit contact surfaces only – HIGH RESIDUE RISK**

Summary					Sensitive to		Spray Applied				Dip Applied			
Product tested	Active ingredient	Working Conc*	pH	Likely Residue?	pH	OM	Minimum time required for kill efficacy							
							Wood	Plastic	Tyre	Metal	Wood	Plastic	Tyre	Metal
<b>Envirosan</b>	Glutaral, didecyldimethylammonium chloride, propan-2-o, methanol	1%	6.9	Yes	B	NS	10s	1 min	NE	10s	10s	10s	NE	10s
<b>SteriGene</b>	Polymeric (Hexamethylene) bigunide hydrochloride alkyl dimethyl benzyl dimethyl ammonium chloride, dodecylamine sulphamat	1%	7.3	Yes	NS	NS	30s	NE	NE	10s	10s	NE	NE	10s
<b>Virkon</b>	Potassium peroxomonosulphate, sodium dodecylbenzene sulphonate, sulfamic acid	1%	4	Yes	NS	S	10s	10s	10s	10s	10s	30s	10s	10s
<b>Byotrol</b>	Polyhexmethylene biguanide hydrochloride, dodecyl dimethylammonium chloride, benzalkonium chloride	0.5	6.9	Yes	NS	NS	10s	10s	10s	10s	10s	10s	10s	10s

NE= Not Effective, NS = Not Sensitive, S=Sensitive, B=Sensitive to basic conditions, OM = Organic matter

\*The working concentration listed in the tables above is the minimum concentration shown to have efficacy against Psa-V