



## LESS COPPER - MORE PROTECTION

Grosafe Chemicals has made significant improvements to its copper fungicide formulation including ease of mixing, handling, application and efficacy. Another result of our research and development programme has been a significant reduction in the amount of applied elemental copper required.

**Hortcare® Copper Hydroxide** reduces the elemental copper applied, without any compromise in disease protection, mixing, handling or spraying benefits.

**Hortcare® Copper Hydroxide** gives superior protection against Psa in Kiwifruit and a wide range of diseases in many other fruit and vegetables because of its smaller particle size and improved bioavailability.

### Benefits of Hortcare® Copper Hydroxide Use

- **Reduced elemental copper application equals better environmental protection**
- **Fewer problems with spraying and handling**
- **Better protection from fungal diseases and bacterial pathogens**
- **Superior rainfastness and persistence due to its fine particle size**

### How does Hortcare® Copper Hydroxide Work?

Copper fungicides inhibit fungal spore germination and mycelial growth. The active agents are free copper ions ( $\text{Cu}^{++}$ ) released from the applied copper. Effective disease control should be the main factor when choosing a copper fungicide. A direct measure of a product's effectiveness is the amount of copper ions it produces, not its metallic copper content alone.

The most effective copper compounds for the prevention of plant diseases are the fixed coppers, particularly copper hydroxide, as crystals of these compounds have the largest surface area for the release of copper ions.

These crystals adhere to the leaf surface and act as ion reservoirs, continuously releasing  $\text{Cu}^{++}$  ions, forming a protective barrier that prevents infection.

There are two broad categories of copper-based products. Those, which are water soluble such as copper sulphate, and those, which are insoluble in water, such the oxychlorides and hydroxides (Hortcare® Copper Hydroxide 300 WDG). Water-soluble formulations are short lived whereas the