

READ SAFETY DIRECTIONS BEFORE OPENING OR USING

DAVID GRAYS

# PHOS-INJECT 200

FUNGICIDE

ACTIVE CONSTITUENT : 200g/L PHOSPHOROUS (PHOSPHONIC) ACID  
Present as the mono-di -POTASSIUM PHOSPHITE

GROUP	Y	FUNGICIDE
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A systemic fungicide for the control of Root Rot in Avocado, Root and Collar Rot in Ornamentals, Root and Collar rot in Citrus, root rot in subterranean clover caused by Phytophthora Fungi and for the control of Downy Mildew in Grapes as per the DIRECTIONS FOR USE table.

500mL  
1 Litre  
5 Litre  
20 Litre  
200Litre

Manufactured and Distributed by  
David Gray & Co Pty Ltd  
2 Rawlinson St. O'Connor.  
Western Australia.  
Phone 08-93374933

<b>N.R.A.</b>	
<b>APPROVED LABEL (TEXT)</b>	
Label No:	56633/0503
Date:	16.16.03
Signature:	<i>[Signature]</i>

## DIRECTIONS FOR USE - AVOCADOS

### Restraints

- DO NOT prune back Avocado trees immediately before or after treatment as burning of new growth shoots may occur
- DO NOT inject trees where the trunk is damaged eg. Sunburnt
- DO NOT inject Avocado trees in cold weather or winter months
- DO NOT inject immediately above or below previous injection sites

CROP/ SITUATION	DISEASE	STATE	RATE	W HP	CRITICAL COMMENTS
Avocado	<i>Phytophthora</i> Root rot (Curative treatment)	N.S.W., Vic, Qld, S.A. & W.A. only	Trunk Injection  Skeletal Trees 1 <sup>st</sup> year : 15ml /metre of canopy diameter.  Preventative Treatment: 7.5ml of product diluted with 7.5ml water.	Nil	Inject tree at spring shoot maturity and repeat application during summer. Ideally inject trees between 6AM and 11AM when the transpiration rate is highest and hence uptake is faster. Drill holes 5mm in diameter and 2.5-5cm deep with a slight downward angle in the trunk. Use one syringe for each 15 ml dose. Syringes should be evenly spaced around the circumference of the trunk. After absorption remove the syringe and it is not necessary to seal the hole as callusing will occur naturally. Thoroughly clean drill-bits and syringes between tree injections with sodium hypochlorite (1.5%) to prevent the spread of sunblotch viroid.

## DIRECTIONS FOR USE – CITRUS

### Restraints

DO NOT apply to citrus under high temperature (above 35°), particularly if humidity is low or to moisture stressed trees.

CROP / SITUATION	DISEASE	STATE	RATE	WHP	CRITICAL COMMENTS
Young or small citrus. Nursery stock and recently transplanted trees.	Phytophthora Root and collar rot <i>P.nicotinae</i> <i>var parasitica</i> <i>P.citrophthora</i>	Qld. N.S.W S.A. N.T. Vic. W.A. only	5-10mL/L sprayed to point of run off or leaf wetness (by boom or any high volume sprayer). Use higher rate under high disease risk conditions.	Nil	1 <sup>st</sup> Application: Late winter (late August) prior to flowering 2 <sup>nd</sup> Application: Autumn ( late March-April) applied to mature fruit. Add a sticker such as menthene (Nu-Film 17) or a non-ionic wetting agent to the spray according to the label directions Repeat applications annually to maintain protection within the tree. Removal of fruit from affected trees will assist recovery of trees. Warning- Young container grown mandarin trees may develop leaf burn and growth retardation following foliar application of Phos Inject 200 at the rate recommended for established trees. Apply by dilute or concentrate spraying equipment. Apply the same total amount of product to the target crop whether applying this product by dilute or concentrate spraying methods.
Mature Citrus. Where disease incidence is higher or well established for marginal soils where high Phytophthora pressure occurs, poorly drained soils  Mature Citrus Low Phytophthora pressure only. Well drained soils.			40L/ha in 3000-8000L of water. OR 160mL in 12L to 32L water per tree.  25L/ha in 3000 to 8000L of water OR 100mL in 12L to 32L water per tree.		

### DIRECTIONS FOR USE – ORNAMENTALS

#### Restraints

DO NOT apply to ornamental plants under extremes of temperature.

DO NOT apply when ornamental plants are dormant or stressed.

CROP/SITUATION	DISEASE	STATE	RATE	CRITICAL COMMENTS
Ornamentals	Phytophthora root and collar rot	Qld, NSW, Vic, Tas., WA, NT only	Knapsack/boom 5 mL/L Air blast 10 mL/L	Apply as a foliar spray at 4-6 weekly intervals when conditions favour disease development.

### DIRECTIONS FOR USE – GRAPES

CROP/SITUATION	DISEASE	STATE	RATE	WHP	CRITICAL COMMENTS
Grapes	Downy mildew <i>Plasmopara viticola</i>	Qld, N.S.W. Vic, S.A. & Tas. only	Dilute Spraying 600mL/100L  Concentrate Spraying – Refer to the Application Section for Vines	Nil	Apply as soon as possible after infection and before spots appear and preferably before sporulation ie. Usually within 3-5 days post infection. Apply by dilute or concentrate spraying equipment. Apply the same total amount of product to the target crop whether applying this product by dilute or concentrate spraying methods. Ensure a minimum of 6 mL product is applied per vine.

## DIRECTIONS FOR USE – SUBTERRANEAN CLOVER

### Restraints

DO NOT apply to subterranean clover at volumes which cause excessive run-off.

CROP/SITUATION	DISEASE	STATE	RATE	WHP	CRITICAL COMMENTS
Subterranean clover	Root rot ( <i>Phytophthora clandestina</i> )	NSW, Vic Tas, SA, WA only	1.5L/ha	14 days (grazing)	Apply as a foliar spray 8-9 days after first irrigation. Apply in Autumn when subterranean clover is at the cotyledon to unfoliate leaf growth stage.

**NOT TO BE USED FOR ANY PURPOSE OR IN ANY MANNER CONTRARY TO THIS LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION.**

### WITHHOLDING PERIODS (WHP)

Avocados, Citrus, Grapes: NOT REQUIRED WHEN USED AS DIRECTED  
Subterranean clover : DO NOT GRAZE OR FEED LIVESTOCK FOR 14 DAYS AFTER APPLICATION

### GENERAL INSTRUCTIONS

**Citrus :** Phos Inject 200 is best applied as a protectant before foliar symptoms and collar rot become evident. Spray trees for even coverage.

**Clover:** Apply Phos Inject 200 at 1.5 L/ ha in 200 L/ha of water. Apply to the subterranean clover seedlings while at the cotyledon to unfoliate leaf stage. Apply between the first and second irrigation stage in autumn.

**Grapes:** Phos Inject 200 is a fungicide with a strong systemic activity against downy mildew (*Plasmopara viticola*) infections.

### CONDITIONS CONDUCIVE TO DOWNY MILDEW INFECTION

(1) PRIMARY INFECTION – Overnight conditions of:

Temperature 10°C

Rainfall 10mm

Soil wetness 24 hours

Leaf wetness 3-4 hours at end of 24 hour period

(2) SECONDARY INFECTION – Overnight conditions of:

Temperature 11°C (minimum)

Humidity 98% for at least 4 hours from midnight to dawn

Leaf wetness 24 hours

1. Apply Phos Inject 200 within 3-6 days of conditions conducive to downy mildew infection.
2. A tank mix of Phos Inject 200 and Copper Oxychloride should be considered for use in post-infection control programs because this mix should provide at least 13 days post-infection control and an additional 20 days protection to spray foliage.  
( NOTE: Unsprayed new growth is not protected)

**Ornamentals:** Phos Inject 200 is a systemic fungicide which is highly active against Phytophthora species. The product is best applied as a protectant against Phytophthora root and collar rot. The product has curative action against Phytophthora in some plant species, ie. Plants that can regenerate roots.

Do not rely on Phos Inject 200 for long term protection of nursery plants. Good nursery hygiene to exclude Phytophthora is advocated. In the field other factors, including the selection of well drained sites, are essential for growing Phytophthora susceptible species.

To avoid phytotoxicity with some plant species it is recommended that the products be tested on a few plants of each species prior to the main application.

#### Fungicide Resistance Warning

GROUP	Y	FUNGICIDE
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Phos-Inject 200 is a member of the phosphonate group of fungicides. For fungicide resistance management Phos-Inject 200 Fungicide is a Group Y Fungicide. Some naturally occurring fungi resistant to the product and other Group Y fungicides may exist through normal genetic variability in any fungal population. The resistant individuals can eventually dominate the fungal population if these fungicides are used repeatedly. These resistant fungi will not be controlled by this product or other Group Y fungicides, thus resulting in a reduction in efficacy and possible yield loss. Since the occurrence of resistant fungi is difficult to detect prior to use, David Gray & Co. Pty. Ltd. Accepts no liability for any losses that may result from the failure of this product to control resistant fungi.

#### Compatibility

Phos-Inject 200 at use dilution can be mixed with mancozeb, sulphur, and the foliar nutrients zinc, manganese and urea.

#### Mixing

**Foliar application:** For foliar spraying Phos-Inject 200 is diluted with water. Phos-Inject 200 is already formulated as a solution in a water base and mixes easily with water. When mixing use only clean uncontaminated tanks. If they have been used for

herbicide application ensure they have been thoroughly decontaminated. Recycle material through the spray pump to ensure good mixing.

For citrus **only** add the recommended amount of product to the tank volume. Add a sticker / filming agent such as menthene ( Nu- Film 17 ) or a non-ionic wetting agent to the spray according to the label directions.

**Trunk injection of Avocados:** The product is used undiluted for very sick trees and diluted 1:1 with water for preventative treatments.

## **Application**

### **Special instructions for Vines**

#### Dilute Spraying

- Use a sprayer designed to apply high volumes of water up to the point of run-off and matched to the crop being sprayed.
- Set up and operate the sprayer to achieve even coverage throughout the crop canopy. Apply sufficient water to cover the crop to the point of run-off. Avoid excessive run-off.
- The required water volume may be determined by applying different test volumes, using different settings on the sprayer, from industry guidelines or expert advice.
  - Add the amount of product specified in the Directions for Use table for each 100L of water. Spray to the point of run-off.
  - The required dilute spray volume will change and the sprayer set up and operation may also need to be changed, as the crop grows.

#### Concentrate Spraying

- Use a sprayer designed and set up for concentrate spraying (that is a sprayer which applies water volume less than those required to reach the point of run-off) and matched to the crop being sprayed.
- Set up and operate the sprayer to achieve even coverage throughout the crop canopy using your chosen water volume.
- Determine an appropriate dilute spray volume (See *Dilute Spraying* above) for the crop canopy. This is needed to calculate the concentrate mixing rate.
- The mixing rate for concentrate spraying can then be calculated in the following way:

### **EXAMPLE ONLY**

1. Dilute spray volume as determined above: For example 1500L/ha
2. Your chosen concentrate spray volume: For example 500L/ha
3. The concentration factor in this example is:  $3 \times$  ( i.e.  $1500L \div 500L = 3$  )
4. If the dilute label rate is 10mL /100L, then the concentrate rate becomes  $3 \times 10$ , that is 30mL /100L of concentrate spray.
  - The chosen spray volume, amount of product per 100L of water, and the sprayer set up and operation may need to be changed as the crop grows.
  - For further information on concentrate spraying, users are advised to consult relevant guidelines, undertake appropriate competency training and follow industry Best Practices.

**PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS**  
DO NOT apply under weather conditions, or from spraying equipment that may cause spray to drift onto nearby plants / crops, cropping lands or pastures.

**PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT**

DO NOT contaminate streams, rivers or waterways with the chemical or used containers.

**STORAGE AND DISPOSAL**

Keep out of reach of children. Store in the closed, original container in a well ventilated area, as cool as possible. Do not store for prolonged periods in direct sunlight.

Triple or preferably pressure rinse containers before disposal. Add rinsings to spray tank. DO NOT dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush or puncture and bury containers in a local authority landfill. If no landfill is available, bury the empty containers below 500mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

**SAFETY DIRECTIONS**

May irritate the eyes and skin. Avoid contact with eyes and skin. Wash hands after use.

**FIRST AID**

If poisoning occurs, contact a doctor or Poisons Information Centre. Phone 131126.

**MATERIAL SAFETY DATA SHEET**

Additional information is listed in the Material Safety Data Sheet available from David Gray & Co. Pty. Ltd.

**BAR CODE**

NRA Approval No. 56633/0503

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**IN A TRANSPORT EMERGENCY DIAL 000 POLICE OR FIRE BRIGADE**

Batch Number:

Date of Manufacture.