DuPont™ Kocide® 2000DS fungicide/bactericide

Technical Information

Active Ingredient:
350 g/kg COPPER HYDROXIDE in the form of a water dispersible granule.

Pack Sizes:
1.5 kg
10 kg

CORROSIVE
Keep out of reach of children

ECOTOXIC
A WATER DISPERSIBLE GRANULE PROTECTANT FUNGICIDE FOR THE CONTROL OF VARIOUS DISEASES OF FRUIT AND VEGETABLE CROPS.

Registered pursuant to the ACVM Act 1997 No. P7070
See www.nzfsa.govt.nz/acvm/ for registration conditions.
Approved pursuant to the HSNO Act 1996 No. HSR000739

READ LABEL BEFORE MIXING AND APPLYING

HAZARD CLASSIFICATION
6.1D, 6.3B, 6.5B, 6.9B, 8.3A, 9.1A, 9.3C

APPROVED HANDLER
This product must be under the control of an approved handler during use.
Use of this product in any manner contrary to this label may be an offence under the HSNO Act.
DANGER - This product is corrosive and may cause eye damage.
HARMFUL - May be harmful if swallowed, inhaled or absorbed through the skin. May cause mild skin irritation and sensitisation from prolonged skin contact. May cause lung damage from repeated oral exposure at high doses.

ECOTOXIC
Very toxic to aquatic organisms. Avoid contamination of any water supply with product or empty container. Harmful to terrestrial vertebrates.

DO NOT allow spray drift outside the target area.

PRECAUTIONS
Keep out of reach of children.

Avoid skin and eye contact. Avoid breathing dust or spray mist. DO NOT eat, drink or smoke while using. When mixing or applying wear waterproof gloves, hat, safety goggles, overalls and footwear. Wash hands and face before meals and after work.

Store in original container, tightly closed and under lock and key. DO NOT store with Class 1, 2, 3.2, 4 or 5 substances or feed, seeds or foodstuffs. Stores containing more than 100 kg of this product require secondary containment and are subject to signage.

When stored appropriately, this product should show no significant degradation for 2 years from the date of manufacture. Contact your supplier for further information about the use of any product that is older than this.

DISPOSAL
Container disposal: Ensure container is empty. Burn, if circumstances, especially wind direction permit, otherwise bury in an approved landfill. Dispose of this product only by using according to this label. Always follow local authority requirements.

FIRST AID
If swallowed: DO NOT induce vomiting. For advice, contact the National Poisons Centre 0800 POISON (0800 764766) or a doctor immediately. For eyes: Hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by the National Poisons Centre, or for at least 15 minutes.

For skin: If skin and hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by the National Poisons Centre, or doctor.

If inhaled: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth to mouth. Get medical attention.

SPILLAGE
Wear appropriate protective clothing. Shovel or sweep up and dispose of waste safely in an approved landfill.
**GENERAL INSTRUCTIONS**

Kocide® 2000DS is a stable form of copper hydroxide in a dry flowable formulation. It is characterized by an extremely easy to pour, free flowing formulation, fine particle size, ease of dispersion and stable spray suspensions. It has high activity in controlling a variety of plant diseases.

Kocide® 2000DS is formulated for application from all types of spray equipment. The spray volume applied per hectare will depend on the spray equipment used, the specific crop and stage of crop growth. For dilute, high volume sprays, use 200 litres (air assisted booms) to 800 litres (hydraulic booms) of water per hectare on most vegetable crops, up to 2500 litres per hectare on mature kiwifruit and grape vines, up to 3000 litres per hectare on mature citrus, and up to 6000 litres per hectare on mature avocados and fruit orchards. FOR LOW VOLUME, SEMI CONCENTRATE SPRAYS ADJUST THE SPRAY TANK CONCENTRATION TO APPLY THE SAME QUANTITY OF KOCIDE® 2000DS PER HECTARE AS FOR DILUTE SPRAYS.

**DIRECTIONS FOR USE**

**FROST INJURY PROTECTION (Bacterial Ice Nucleation Inhibitor)**

Application of Kocide® 2000DS made to all crops listed on this label at the rates indicated, 2 - 5 days prior to anticipated frost conditions, will afford control of ice nucleating bacteria (Pseudomonas syringae, Erwinia herbicola and Pseudomonas fluorescens) and may therefore provide protection against light frost. Not recommended for those geographical areas where weather conditions favour severe frost.

**APPLICATION PROCEDURE:**

Apply with well-maintained, accurately calibrated spray equipment.

Complete spray coverage is essential for disease control. Forward speeds should be sufficiently slow to ensure full spray coverage of the crop being treated. For specified crops DO NOT apply less than the label recommended minimum rate of Kocide® 2000DS. Under heavy disease pressure or when conditions favour such, use the higher rate and shorter spray intervals specified for each crop. In addition, use the higher rates for larger mature tree crops and dense foliage.

The per hectare use rate of Kocide® 2000DS is applicable for both dilute and concentrate spraying. For concentrate spraying or aerial application, unless you have had specific previous experience, it is advisable to test for compatibility with other chemicals and tolerance to crop injury prior to full-scale commercial utilisation. While volume is important in obtaining full spray coverage, often factors such as foliage density, environmental conditions and sprayer calibrations, have a greater impact. Ensure that sprayers are calibrated to spray equipment manufacturers specifications and environmental conditions are within acceptable tolerances.

NOTE: Kocide® 2000DS should not be applied in a spray solution having a pH of less than 6.5 as phytotoxicity may occur. Applying Kocide® 2000DS in a spray solution having a pH greater than 9.0 may result in reduced level of disease control. Environmental conditions such as extended periods of wet weather, which alter the pH of the leaf surface, may affect the performance of Kocide® 2000DS resulting in possible phytotoxicity or loss of effectiveness.

**MIXING INSTRUCTIONS**

Kocide® 2000DS is not water soluble, it is water dispersible and as such must have direct contact with water to disperse. Always pour Kocide® 2000DS slowly into water while stirring. **No additional surfactants are needed.** Fill spray tank one-half full with water. Pour the correct quantity of Kocide® 2000DS slowly into the tank while hydraulic or mechanical agitation is operating and continue filling with water. Spreaders, sticker, insecticides and nutrients etc should be added last only after the Kocide® 2000DS has been thoroughly mixed. Observe all cautions and limitations on the labels of all products used in mixtures. If compatibility is in question, use the compatibility jar test before mixing.

Kocide® 2000DS may be measured volumetrically. As a guide use the scale below. Pour Kocide® 2000DS slowly into a dry measuring cylinder or jug.

<table>
<thead>
<tr>
<th>KOCIDE® 2000DS</th>
<th>50 g = 50 mL</th>
<th>100 g = 100 mL</th>
<th>150 g = 150 mL</th>
<th>200 g = 200 mL</th>
<th>250 g = 250 mL</th>
<th>300 g = 300 mL</th>
<th>500 g = 500 mL</th>
<th>1000 g = 1000 mL</th>
</tr>
</thead>
</table>

NOTE: Measurement by weight is the most accurate.

**COMPATIBILITY**

Kocide® 2000DS is compatible with most commonly used fungicides and insecticides as a tank mix. **DO NOT MIX with Attack** for use on glasshouse crops. **DO NOT MIX** with diazinon or with strongly alkaline or acidic materials. If compatibility is in question, use the compatibility jar test before mixing a whole tank. For further information, consult your supplier.

**RECORD KEEPING**

Records of use, as described in The New Zealand Management of Agrichemicals (NZS8049) must be kept.

**NOTICE TO BUYER**

DuPont warrants that this product conforms to the chemical description on the label thereof and if reasonably fit for purposes stated on such label only when used in accordance with directions under normal use conditions. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use of application, all of which are beyond the control of DuPont. To the extent permitted at law, DuPont shall not be liable for consequential, special or indirect damages resulting from the use or handling of this product. All such risks shall be assumed by the buyer.

**TO THE EXTENT PERMITTED AT LAW, DUPONT MAKES NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.**
<table>
<thead>
<tr>
<th>CROP</th>
<th>DISEASE</th>
<th>RATE g/100 litres</th>
<th>APPLICATION RATE AND TIMING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apples</td>
<td>Black spot</td>
<td>190 (minimum 3.75 kg, ha)</td>
<td>Apply as a full cover spray. Make application between silver-tip and green-tip. CAUTION: Late application may cause phytotoxicity. Discontinue use when green-tip is 1cm.</td>
</tr>
<tr>
<td>Avocado</td>
<td>Anthracnose</td>
<td>115 – 150 (minimum 3.4 kg/ha)</td>
<td>Apply at monthly intervals from flowering to harvest. Use the higher rate when conditions favour disease. During prolonged wet weather, reduce application intervals to 14 days.</td>
</tr>
<tr>
<td>Bushfruit Cane</td>
<td>Cane Wilt, Cane Spot, Spur Blight, Leaf Spot</td>
<td>115 – 150 (minimum 1.1 kg/ha)</td>
<td>Apply at bud burst and green tip and as a seasonal spray at 10 - 14 day intervals. Use the higher rate early season or under high disease pressure.</td>
</tr>
<tr>
<td>Strawberries</td>
<td>Leaf Spot</td>
<td></td>
<td>Begin application when plants are established and continue on a weekly schedule throughout the season. Use the higher rate early season or under high disease pressure. NOTE: Discontinue if signs of crop injury appear.</td>
</tr>
<tr>
<td>Brassica Vegetables: Cabbage Cauliflower Broccoli Brussel Sprouts</td>
<td>Downy Mildew</td>
<td>115 – 150 (minimum 0.45 kg/ha)</td>
<td>Begin application after transplants are set in the field shortly after emergence of field seeded crops. Repeat at 10 - 14 day intervals.</td>
</tr>
<tr>
<td>Celery</td>
<td>Septoria Leaf Spot</td>
<td>150 (minimum 0.75 kg/ha)</td>
<td>Apply as soon as the plants are set in the field, then at 5 - 7 day intervals depending on disease severity and environmental conditions. Sunspray® may be added at 1 litre per 100 litres of spray mix.</td>
</tr>
<tr>
<td>Citrus</td>
<td>Melanose Verrucosis</td>
<td>75 - 150 (minimum 3 kg/ha for mature trees)</td>
<td>Apply during pre and post bloom periods. Apply in the autumn and continue as needed. Apply to skirts of trees to a height of at least 1 metre. Apply also to bare ground 0.5 metres beyond skirt. Use higher rates when conditions favour disease. Copper marking may occur on sensitive varieties or under slow drying conditions.</td>
</tr>
<tr>
<td>Brown Rot</td>
<td>150 - 190 (minimum 3 kg/ha for mature trees)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cucurbits</td>
<td>Angular Leaf Spot Downy Mildew</td>
<td>115 - 225 (minimum 1.1 kg/ha)</td>
<td>Apply at 7 day intervals after plants have started to vine.</td>
</tr>
<tr>
<td>Feijoas</td>
<td>Leaf Spot (Glomerella sphaceloma)</td>
<td>115 - 150 (minimum 1.7 kg/ha)</td>
<td>Repeat as necessary.</td>
</tr>
<tr>
<td>Grapes</td>
<td>Black Spot Downy Mildew</td>
<td>115 – 225 (minimum 1.5 kg/ha)</td>
<td>Begin application at bud break and continue to apply during the pre and post bloom periods at 10 - 14 day intervals until harvest. NOTE: Discontinue use if signs of injury are observed.</td>
</tr>
<tr>
<td>Kiwifruit</td>
<td>Leaf Spot (Phomopsis sp. and others) Botryosphaeria</td>
<td>115 – 150 (minimum 2.25 kg/ha)</td>
<td>Apply as post harvest dormant spray only. Apply after harvest but before leaf fall, after pruning, and as two sprays one month apart prior to bud burst.</td>
</tr>
<tr>
<td>Lettuce</td>
<td>Downy Mildew</td>
<td>115 – 190 (minimum 0.56 kg/ha)</td>
<td>Begin treatment from seed emergence or when transplants are set in the field and repeat every 7 - 10 days as needed to suppress the disease.</td>
</tr>
<tr>
<td>Onions</td>
<td>Downy Mildew Bacterial blight</td>
<td>150 (minimum 1.65 kg/ha)</td>
<td>Apply when the disease first appears and repeat every 10 - 14 days while conditions allow infection.</td>
</tr>
<tr>
<td>Passionfruit</td>
<td>Septoria Spot Brown Rot Grease Spot</td>
<td>75 (minimum 0.75 kg/ha)</td>
<td>Apply at 2-4 week intervals alternating with mancozeb from November to March. Where grease spot is a problem, 2 week intervals may be necessary.</td>
</tr>
<tr>
<td>Peas</td>
<td>Downy Mildew Leaf Spot</td>
<td>115 - 150 (minimum 1.13 kg/ha)</td>
<td>Apply from seed emergence and repeat at 7 - 14 day intervals depending upon disease severity.</td>
</tr>
</tbody>
</table>
## DIRECTIONS FOR USE (continued)

<table>
<thead>
<tr>
<th>CROP</th>
<th>DISEASE</th>
<th>RATE g/100litres</th>
<th>APPLICATION RATE AND TIMING</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pear</strong></td>
<td><strong>Black Spot</strong></td>
<td>190 (minimum 3.75 kg/ha)</td>
<td>Apply as full cover spray. Make application between silver-tip and green-tip. CAUTION: Late application may cause phytotoxicity. Discontinue use when green-tip is 1cm. NON-BEARING TREES: Maintain a protective cover of regular sprays at 14 - 21 day intervals until active vegetative growth ceases. Reduce interval between sprays if wet weather persists. POST HARVEST: Apply at 190g/100litres at 21 day intervals from harvest to leaf fall. Reduce intervals between sprays if wet weather occurs and vegetative growth is active. SMOOTH SKIN VARIETIES: <strong>DO NOT</strong> apply between green tip and harvest as russetting may occur.</td>
</tr>
<tr>
<td><strong>Fire Blight</strong></td>
<td><strong>(Erwinia amylovora)</strong></td>
<td>40 - 75</td>
<td></td>
</tr>
<tr>
<td><strong>Pear</strong></td>
<td><strong>Leaf Curl</strong></td>
<td>190 (minimum 3.75 kg/ha)</td>
<td>Correct timing is critical for effective control. Apply when buds are swelling but <strong>BEFORE</strong> and within <strong>ONE WEEK OF BUD OPENING</strong>, with a second application of 115g/100litres of water 10 - 14 days later.</td>
</tr>
<tr>
<td><strong>Potato</strong></td>
<td><strong>Early Blight</strong></td>
<td>225 - 340 (minimum 2.25 kg/ha)</td>
<td>Apply every 7 days from when plants are 15cm high until 2 weeks before harvest.</td>
</tr>
<tr>
<td><strong>Stone Fruit</strong></td>
<td><strong>Shot Hole</strong></td>
<td>190 (minimum 3.75 kg/ha)</td>
<td></td>
</tr>
<tr>
<td><strong>Tomato</strong></td>
<td><strong>Early Blight</strong></td>
<td>115 - 225 (minimum 1.5-3.0 kg/ha)</td>
<td>Apply at 7 - 10 day intervals depending on conditions favourable for development of the disease. Ensure spray volumes are increased as crop reaches maximum growth so that full cover spraying of upper and lower leaf surfaces is obtained. Repeat application after more than 13mm rain or irrigation.</td>
</tr>
<tr>
<td><strong>Tamarillo</strong></td>
<td><strong>Leaf Spot</strong></td>
<td>115 (minimum 1.5 kg/ha)</td>
<td>Apply as necessary.</td>
</tr>
</tbody>
</table>

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0505 Kocide® 2000DS fungicide/bactericide Page 4 of 4