

Crop Care  
**KUMULUS<sup>®</sup> DF**

Wettable Sulphur Fungicide Spray

**ACTIVE CONSTITUENT: 800 g/kg SULPHUR (S)**

GROUP **Y** FUNGICIDE

**For the control of certain fungal diseases and mites in grapevines and other crops as per the DIRECTIONS FOR USE table.**

IMPORTANT: READ THE ATTACHED LEAFLET BEFORE USE.

**Net Contents: 15 kg**

Crop Care Australasia Pty Ltd, Unit 15/16 Metroplex Avenue, Murarrie Qld 4172

APVMA Approval No.: 58903/15kg/0308

**STORAGE AND DISPOSAL**

KEEP OUT OF REACH OF CHILDREN.

Store in the closed, original container in a dry, cool, well-ventilated area out of direct sunlight. The special formulation of KUMULUS DF requires that the bag is kept sealed to prevent deterioration. Single rinse before disposal. Add rinsings to spray tank. DO NOT dispose of undiluted chemicals on site. Puncture and bury empty containers in a local authority landfill. If no land fill is available, bury the containers below 500 mm 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.

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® = Registered trademark of BASF

**FIRST AID**

If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 13 11 26.

**MATERIAL SAFETY DATA SHEET**

Additional information is listed in the Material Safety Data Sheet which can be obtained from your supplier or the Crop Care website - [www.cropcare.com.au](http://www.cropcare.com.au)

**CONDITIONS OF SALE**

Crop Care Australasia Pty Ltd will not accept any responsibility whatsoever and howsoever arising and whether for consequential loss or otherwise in connection with the supply or use of these goods other than responsibility for the merchantable quality of the goods and such responsibilities mandatorily imposed by Statutes applicable to the sale or supply of these goods. To the extent allowed by such Statutes the liability of Crop Care Australasia Pty Ltd is limited to the replacement of the goods or (at the option of Crop Care Australasia Pty Ltd) the refund of the price paid and is conditional upon a claim being made in writing and where possible sufficient part of the goods to enable proper examination being returned to Crop Care Australasia Pty Ltd within thirty days of delivery.

In a Transport Emergency Dial <b>000</b> Police or Fire Brigade	SPECIALIST ADVICE IN AN EMERGENCY ONLY <b>1800 033 498</b> ALL HOURS- AUSTRALIA WIDE
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Insert Barcode  
Label code and  
drumMUSTER logo  
as required

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**DIRECTION FOR USE**

**RESTRAINTS:**

DO NOT apply within 3 weeks of an oil spray except when mixing canola oil as a woolly bud spray on grapevines.

DO NOT apply product in combination with spraying oils except to deciduous fruit in dormant period.

DO NOT use on grapevines when both temperature exceeds 30° C and relative humidity exceeds 75% and other crops when temperature exceeds 24° C.

**TREE AND VINE CROPS**

**RATE**

In the following table, all rates are given for dilute spraying.  
For concentrate spraying, refer to the Application section

**CRITICAL COMMENTS**

**For all tree and vine crop uses in this table:**  
Apply by dilute or concentrate spraying equipment except where stated otherwise.  
Apply the same total amount of product to the target crop whether applying this product by dilute or concentrate spraying methods.

CROP	PEST/DISEASE	STATE	RATE g/100 L	
Citrus	Citrus rust mite ( <i>Phyllocoptruta oleivora</i> ), brown citrus rust mite ( <i>Tegolophus australis</i> ), citrus bud mite ( <i>Eriophyes sheldoni</i> ), moss, lichens	Qld, NSW, Vic, SA, WA only	400 to 500	Spray July to August with thorough coverage. <b>DO NOT</b> use on citrus in hot weather. Use the higher rates for heavy infestations. Leave at least 3 weeks between sprays of oil and product.
	Citrus bud mite ( <i>Eriophyes sheldoni</i> )	Tas only	200 to 300	
	Melanose	NSW, WA only		In NSW, application will assist in control.
	White louse scale ( <i>Unaspis citri</i> )			May be added to copper spray at petal fall or applied separately during spring or autumn. Use the higher rates for heavy infestations.
Grapevines	Rust mite ( <i>Calepitrimerus vitis</i> )	All states	600 *	Apply as a dilute spray in mixture with canola oil (eg. Supastik at 2L/100L) between budswell and mid-late woolly bud stage <b>or</b> apply alone between woolly bud and soon after budburst. These treatments will be less effective and may be phytotoxic if applied as concentrate sprays and should be applied in a dilute spray volume that results in visible wetting of the buds, canes and cordons when the temperature is at least 15° C during application and for several hours afterwards. The wood on crowns, cordons and canes should be thoroughly wet with this application.  <b>DO NOT</b> apply in mixture with canola oil after woolly bud stage as crop phytotoxicity will occur.  *High rates of wettable sulphur are detrimental to some natural enemies of pests especially parasitoids of Mealybug and Light Brown Apple Moth.
	Bud mite and Grapeleaf blister mite, ( <i>Colomerus vitis</i> )		200	Apply as a dilute spray between 100% budburst on the basal nodes and 1 week later. This treatment will be less effective if applied as a concentrate spray and should only be applied in a dilute spray volume that results in visible wetting of the buds, canes and cordons when the temperature is at least 15° C during application and for several hours afterwards. During summer, build up of blister mites may be checked by sulphur sprays for powdery mildew, but the early budburst spray is very important for bud mite control.

TREE AND VINE CROPS (CON'T)				
RATE				CRITICAL COMMENTS
In the following table, all rates are given for dilute spraying. For concentrate spraying, refer to the Application section				
CROP	PEST/DISEASE	STATE	RATE g/100 L	
Grapevines cont.	Powdery mildew ( <i>Uncinula necator</i> )	All states	200 to 600*	<p><b>For all tree and vine crop uses in this table:</b>  <u>Apply by dilute or concentrate spraying equipment except where stated otherwise.</u>                      Apply the same total amount of product to the target crop whether applying this product by dilute or concentrate spraying methods.</p>
				<p>Only use higher rates at the beginning of the season when temperatures are lower (15°C - 20°C at application). Temperatures should be at least 15°C during application and for several hours afterwards to achieve effective control. Thorough coverage is required to provide effective control. <b>DO NOT</b> apply when both temperature exceeds 30°C and relative humidity exceeds 75% as crop phytotoxicity may occur.</p> <p>Commence application at 2 weeks after budburst with further sprays applied at 4 and 6–7 weeks after budburst. In cool climates where early growth of vines is slow, the first spray may be applied later than 2 weeks after budburst and the spray interval may be extended provided 3 sprays are applied between budburst and flowering. Further applications will be required at 2-3 week intervals (depending on the growth rate of vines) up to berry softening, where disease pressure is moderate to high and/or susceptible varieties are being treated. Use in a program with other fungicides registered for powdery mildew control with different modes of action, will provide better powdery mildew control than continuous sprays of KUMULUS alone.</p> <p>Note: KUMULUS may be combined with a registered copper fungicide for control of both powdery and downy mildew.</p> <p>* High rates of wettable sulphur are detrimental to some natural enemies of pests especially parasitoids of Mealybug and Light Brown Apple Moth.</p>
Kiwifruit	Twospotted mite ( <i>Tetranychus urticae</i> )	NSW, WA only	150 to 200	Spray only when pest is present. Repeat application only when necessary. DO NOT apply during hot weather.
Mangosteen	Powdery mildew, mites	All states	400	Apply as a foliar spray. Spray when pests are present. Repeat applications only when necessary. DO NOT apply during hot weather.
Pome fruit	Powdery mildew ( <i>Podosphaera leucotricha</i> )	All States	400	Apply at least 2 sprays before blossom.
		NSW, Vic, Tas, SA, WA only	200 to 300	Apply fortnightly after blossom. Use the lower rate if weather is hot and spraying non-sensitive varieties. DO NOT use on sulphur-sensitive apple and pear varieties in hot weather. Also suppresses mite development.
		Qld only	350	
	Black spot (scab) ( <i>Venturia</i> spp.)	Vic, Tas, SA only	200	Apply at pink bud, petal fall and then at intervals of 2 to 3 weeks. DO NOT use on sulphur-sensitive apple and pear varieties in hot weather. Also suppresses mite development.
		Qld only	350	
Rambutan	Powdery mildew, mites	All states	400	Apply as a foliar spray. Spray when pests are present. Repeat applications only when necessary. DO NOT apply during hot weather.

TREE AND VINE CROPS (CON'T)				
RATE				CRITICAL COMMENTS
In the following table, all rates are given for dilute spraying. For concentrate spraying, refer to the Application section				
CROP	PEST/DISEASE	STATE	RATE g/100 L	<p><b>For all tree and vine crop uses in this table:</b>  <u>Apply by dilute or concentrate spraying equipment except where stated otherwise.</u>                      Apply the same total amount of product to the target crop whether applying this product by dilute or concentrate spraying methods.</p>
Stone fruit (except apricots)	Rust ( <i>Tranzschelia discolor</i> )	NSW, Vic, Tas, SA, WA only	200 to 300	
		Qld only	350	
	Brown rot (fruit) ( <i>Monilinia fructicola</i> )	NSW, Vic, Tas, SA, WA only	200 to 300	Apply 4 weeks after petal fall then as cover sprays.
		Qld only	350	Apply at petal fall only.

OTHER CROPS				
CROP	PEST/DISEASE	STATE	RATE	CRITICAL COMMENTS
Ornamentals	Powdery mildew, twospotted mite ( <i>Tetranychus urticae</i> )	Vic, Tas, SA, WA only	200 g/100 L	Apply when pest or disease is first seen and repeat every 10 to 21 days.
		Qld only	350 g/100 L	
	Powdery mildew	NSW only	200 g/100 L	
Strawberries	Powdery mildew	NSW, WA only	200 to 300 g/100 L	Apply when the disease is first noted, then at 10 to 14 day intervals during humid weather.
Tomatoes for processing	Powdery mildew, bean rust, tomato russet mite, bean spider mite, twospotted mite	Vic, Tas, SA, WA only	2 kg/ha	Apply when pest or disease is first seen and repeat as necessary. Crop phytotoxicity may occur when applications occur during hot conditions. DO NOT apply during the heat of the day.
	Powdery mildew, bean rust, tomato russet mite, bean spider mite,	NSW only		
Vegetables (NOT cucumbers or rock-melons)	Powdery mildew, rust ( <i>Uromyces</i> spp.), tomato russet mite, ( <i>Aculops lycopersici</i> ), bean spider mite ( <i>Tetranychus ludeni</i> )	Vic, Tas, SA, WA only	200 to 300 g/100 L	Apply when pest or disease is first seen and repeat every 14 to 21 days. Use the higher rate in crops with a large leaf cover or when conditions favour disease and/or mite development. DO NOT apply during the heat of the day.
		NSW only	200 g/100 L	
	Twospotted mite ( <i>Tetranychus urticae</i> )	Vic, Tas, SA, WA only	200 to 300 g/100 L	
	Powdery mildew, rust ( <i>Uromyces</i> spp.), tomato russet mite	Qld only	350 g/100 L	

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

**WITHHOLDING PERIOD: NOT REQUIRED WHEN USED AS DIRECTED.**

## GENERAL INSTRUCTIONS:

### FUNGICIDE RESISTANCE WARNING

#### GROUP Y FUNGICIDE

KUMULUS DF is a member of the multi-site activity group of fungicides. For fungicide resistance management KUMULUS DF is a Group Y fungicide. Some naturally occurring individual fungi resistant to KUMULUS DF and other Group Y fungicides may exist through normal genetic variability in any fungal population. The resistant individuals can eventually dominate the fungi population if these fungicides are used repeatedly. These resistant fungi will not be controlled by KUMULUS DF and 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, Crop Care Australasia Pty Ltd accepts no liability for any losses that may result from the failure of KUMULUS DF to control resistant fungi.

### MIXING

Slowly pour the KUMULUS DF into the spray tank three-quarters filled with water, with the agitation system actively moving. Alternatively, premix in a bucket, by adding to the KUMULUS DF a quantity of water of at least half the volume of the KUMULUS DF, and stir immediately. Add this mixture to the bulk of the water in the spray vat with agitation running. If tank mixing with another product, always add KUMULUS to the spray tank first. Tank mixtures containing KUMULUS should not be left overnight before use. Apply spray mix immediately to avoid settling.

### APPLICATION

#### Tree crops and 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 100 L 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 volumes 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

Dilute spray volume as determined above:

For example 1500 L/ha

Your chosen concentrate spray volume:

For example 500 L/ha

The concentration factor in this example is: 3 X  
(i.e.  $1500 \text{ L} \div 500 \text{ L} = 3$ )

At the dilute label rate of 200 g/100 L, then the concentrate rate becomes 3 x 200, that is 600 g/ 100 L of concentrate spray.

The chosen spray volume, amount of product per 100 L 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 industry guidelines, undertake appropriate competency training and follow industry Best Practices.

#### WETTING AGENT

If leaves and fruit are hairy or waxy, or where the water is hard, add a non-ionic wetting agent eg. Crop Care Shirwet\* 600 Spray Activator Wetting and Spreading Agent, at the approved label rate.

#### COMPATIBILITY

KUMULUS DF is compatible with most insecticides, fungicides and foliar fertilisers including POLYRAM® DF, thiram, ziram, Scala+, Mycloss+, carbaryl, azinphos, urea, Foliar Nitrofoska®, Wuxal+ Foliar Nutrient and Wuxal Calcium Foliar Nutrient.

KUMULUS DF is **not compatible** with mineral oils or formulations containing mineral oil.

#### RE-ENTRY PERIOD

KUMULUS DF is of low toxicity and irritancy, and therefore no specific requirements for re-entry into treated areas are indicated.

#### 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 susceptible plants/crops, cropping lands or pastures.

DO NOT spray cucumbers, rockmelons or apricots as these plants exhibit low tolerance to sulphur. Where there is a range of rates, apply the lower rate during the hot dry months to avoid scorching.

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

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

**STORAGE AND DISPOSAL**

KEEP OUT OF REACH OF CHILDREN.

Store in the closed, original container in a dry, cool, well-ventilated area out of direct sunlight. The special formulation of KUMULUS DF requires that the bag is kept sealed to prevent deterioration. Single rinse before disposal. Add rinsings to spray tank. DO NOT dispose of undiluted chemicals on site. Puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500 mm 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.

**FIRST AID**

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+ Other Trademarks

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