

IMPORTANT: READ THIS BOOKLET BEFORE USE
READ SAFETY DIRECTIONS BEFORE OPENING OR USING

COPPERGUARD[®]



COPPER FUNGICIDE

ACTIVE CONSTITUENT: 93g/L COPPER (Cu)
Present as Copper Ammonium Complex.

GROUP M1 FUNGICIDE

A copper fungicide / bactericide solution for the control
of various diseases of fruit and vegetables as per
Directions For Use table.

DIRECTIONS FOR USE:

RESTRAINTS:

DO NOT apply when either hot (above 35°C) or frost prone conditions prevail.

DO NOT apply when poor drying conditions exist or if likely to rain before the spray is dry.

DO NOT apply to wet crops.

DO NOT apply to copper-shy crops or cultivars.

DO NOT mix with acidifying/buffering agents unless they are required to maintain the pH between 6&7.

The stability and efficacy of Copperguard is pH dependent (refer to Mixing Instructions). **DO NOT** mix with phosphate-based acidifiers or buffers.

CROP	DISEASE	RATE (by high volume sprayer, > 500L/ha)	RATE (by air or ultra low volume sprayer, < 500 L/ha)	CRITICAL COMMENTS
VEGETABLES				
BEANS	Common blight (Xanthomonas campestris pv. phaseoli)	500mL / 100L water	2.5L/ha*	Apply at first sign of infection or as a preventative spray. Repeat every 7 – 14 days depending on the disease pressure. Spray immediately after heavy rains, hail or dust storms
	Bacterial brown spot (Pseudomonas syringae pv. syringae)			Apply within 21 days of emergence and repeat every 10 – 14 days depending on the disease pressure.
	Chocolate spot (Botrytis spp.) Rust (Uromyces spp.)			Spray at first sign of infection. Repeat every 10-14 days while conditions allow infection.
	Halo blight (Pseudomonas syringae pv. phaseolicola)	500 – 750mL / 100L water	2.5L/ha	Apply every 10-14 days from the time the crop is 15-30cm high, while conditions are highly favourable for infection.
	<i>* AERIAL APPLICATION: Apply in 40L water in a preventative program as for ground applications</i>			
BRASSICAS (Including broccoli, brussels sprouts, cabbage, cauliflower, chinese cabbage, collards, kale, kohlrabi, mustard, rape, turnip)	Downey mildew (peronospora parasitica) Black rot (Xanthomonas campestris pv. campestris) Peppery leaf spot (Pseudomonas syringae pv. maculicola) Ring spot (Mycosphaerella brassicicola)	500mL / 100L water	2.5 L /ha	Begin spraying from the seedling stage until maturity. Spray every 10-14days depending on weather conditions and disease pressure. Do not use on copper sensitive varieties.

CROP	DISEASE	RATE (by high volume sprayer, > 500L/ha)	RATE (by air or ultra low volume sprayer, < 500 L/ha)	CRITICAL COMMENTS
BROCCOLI	See BRASSICAS			
BRUSSELS SPROUTS	See BRASSICAS			
BUTTERNUT	See CUCURBITS			
CABBAGE	See BRASSICAS			
CAPSICUMS	Bacterial Spot (Xanthomonas campestris pv. vesicatoria) Bacterial canker (Corynebacterium michiganense pv. michiganense)	500mL / 100L water	2.5L/ha	SEED BEDS: Apply every 7 days during wet weather. FIELD CROPS: Begin spraying at first sign of disease and repeat every 7-14days depending on weather conditions and disease pressure. Use the shortest interval when conditions are highly favourable for infection. These applications will reduce the spread of bacterial canker but they will not control seed or soil-borne infection.
CARROTS	Leaf Spot (Alternaria, Septoria, Cerospora)	500mL / 100L water	2.5L/ha	Begin spraying at first sign of disease and repeat every 10-14 days depending on weather conditions and disease pressure.
CAULIFLOWER	See BRASSICAS			
CELERY	Leaf Spot (Spetoria apiicola) Bacterial soft rot (Erwinia carotovora p.v carotovora)	500 mL / 100L water	2.5L / ha	Spray every 7-14 days. Use the shortest interval when weather conditions favour disease (i.e. cool and wet weather)
CHINESE CABBAGE	See BRASSICAS			
CUCUMBERS	See CUCURBITS			
CUCURBITS (including cucumbers, melons, pumpkin, squash, watermelon, zucchini, etc)	Downy mildew (pseudoperonospora cubensis)	400mL / 100L Water	2.5L/ha	Spray at early vineing stage or when infestation is expected. Only use as a preventative spray. After the disease has established itself, a systematic fungicide must be used. Do not spray when plants are under stress, i.e. hot, dry conditions.
	Angular Leaf Spot (Pseudomonas syringae pv. lachrymans)	500mL / 100L water		Spray at first sign of disease and repeat every 7-10 days

CROP	DISEASE	RATE (by high volume sprayer, > 500L/ha)	RATE (by air or ultra low volume sprayer, < 500 L/ha)	CRITICAL COMMENTS
LETTUCE	Downy mildew (<i>Bremia lactucae</i>) Bacterial Leaf Spot (<i>Xanthomonas campestris</i> pv. <i>vitiensis</i>) Anthracnose (<i>Microdochium panattonianum</i>)	300mL / 100 L water	1 L/ha maximum	Begin spraying at first sign of disease and repeat every 7-10 days depending on weather conditions and disease pressure. This product predisposes lettuce to frost damage. Lettuce should not be treated with this product if frosts are likely since crop damage may occur. Do not use on copper sensitive varieties.
MELONS	See CUCURBITS			
ONIONS	Downy mildew (<i>Peronospora destructor</i>)	500 mL / 100 L water	2.5L / ha	Begin spraying at first sign of disease and repeat every 10 days depending on weather conditions and disease pressure.
PARSNIPS	Leaf spot (<i>Septoria</i> spp.)	500mL / 100L water	2.5L / ha	Begin spraying at first sign of disease and repeat every 10-14 days depending on weather conditions and disease pressure.
PEAS	Ascochyta blight (<i>Ascochyta</i> spp.) Bacterial blight (<i>Pseudomonas syringae</i> pv. <i>pisi</i>)	500mL / 100 L water	2.5L / ha*	Begin spraying at first sign of disease and repeat every 10 days depending on weather conditions and disease pressure. *AERIAL APPLICATION: apply in 40L water in a preventative program as for ground applications.
POTATOES	Early blight / Target spot (<i>Alternaria solani</i>)	500mL / 100L water	2.5L/ ha	Apply from crop emergence to maturity at 7-10day intervals while conditions favour development of this disease. Depending on plant size, apply in high enough water volume to ensure good coverage. Ensure that both upper and lower surfaces are treated.
	Late blight / Irish blight (<i>Phytophthora infestans</i>)	500 mL <i>plus</i> 200g mancozeb / 100L water	2.5L/ ha <i>plus</i> 1kg/ha mancozeb	
	Early & Late Blight	-	2.5L / ha	AERIAL APPLICATION: apply in 40L water in a preventative program. Commence application at the 5 leaf stage and repeat at 7-10day intervals.
PUMPKIN	See CUCURBITS			
RED BEET	Downy mildew (<i>Peronospora farinosa</i>) Rust (<i>Uromyces betae</i>)	500mL / 100L water	2.5L/ha	Apply every 10-14 days, from the seedling stage until maturity, while conditions allow infection.

CROP	DISEASE	RATE (by high volume sprayer, > 500L/ha)	RATE (by air or ultra low volume sprayer, < 500 L/ha)	CRITICAL COMMENTS
RHUBARB	Crown Rot (<i>Phytophthora</i> spp.)	500mL / 100L water	-	Dip rhubarb crowns before planting.
	Downy mildew (<i>Peronospora jaipiana</i>)	500mL / 100L water	2.5L / ha	Spray at 14 day intervals, from the seedling stage until maturity, while conditions allow infection.
SILVER BEET	Downy mildew (<i>Peronospora farinosa</i>)	500mL / 100L water	2.5L / ha	Begin spraying from the seedling stage until maturity and repeat every 10-14 days depending on weather conditions and disease pressure. Do not use on copper sensitive varieties.
SQUASH	See CUCURBITS			
TOMATOES	Bacterial Spot (<i>xanthomonas campestris</i> pv. <i>vesicatoria</i>) Bacterial Speck (<i>pseudomonas syringae</i> pv. <i>tomato</i>) Bacterial canker (<i>Clavibacter michiganensis</i> pv. <i>michiganensis</i>)	500mL / 100L water	2.5L / ha	Apply as a preventative spray at 7-10 day intervals. Depending on plant size, apply spray at a high enough volume to ensure good coverage. Ensure that both the upper and lower surfaces are treated. The shortest interval should be used when conditions are very favourable for infection. ie. During wet weather and when inoculum levels are high. These applications will reduce the spread of bacterial canker but they will not control seed or soil borne infection.
	Early blight / Target spot (<i>Alternaria solani</i>) Septoria leaf spot (<i>Septoria</i> spp.)			Start application shortly after transplant when plants are 15cm high and before symptoms appear. Apply every 7-10 days depending on weather conditions favourable for the development of the disease. Depending on plant size, apply spray at high enough volume to ensure good coverage. Ensure that both the upper and lower surfaces are treated. The shortest interval should be used when conditions are highly favourable for infection, ie during wet weather and when inoculum levels are high.
	Late blight / Irish blight (<i>phytophthora infestans</i>)			Begin spraying at first sign of disease and repeat every 10-14 days.
	Tomato seedlings	Bacterial Speck (<i>Pseudomonas syringae</i> pv. <i>tomato</i>)	500mL / 100L water	

CROP	DISEASE	RATE (by high volume sprayer, > 500L/ha)	RATE (by air or ultra low volume sprayer, < 500 L/ha)	CRITICAL COMMENTS
WATERMELON	See CUCURBITS			
ZUCCHINI	See CUCURBITS			
FRUIT				
BANANAS	Yellow sigatoka (Mycosphaerella musicola) (QLD, NSW, WA, NT only)	500ml / 100L water plus 300-600mL/ha Nu-Film®-17	2.5L/ha	Spray monthly from December to may when weather conditions favour disease. Ensure good coverage.
	Phytophthora stem canker (NSW, WA only)	Stem application: 250mL/L water or 250mL / L water based paint		Mix to a smooth consistency. Apply only to pseudostems wherever cankers appear, after removing dead tissue. Repeat applications up to a maximum of 5 per season until natural healing has commenced. Application with paint carrier may only require 1 or 2 treatments in a season.
STRAWBERRIES	Leaf Spot (Mycosphaerella fragariae) Grey mould (Botrytis cinerea) (VIC, SA, TAS, WA only)	500ml / 100L water	2.5L/ha	Spray when plants are established and repeat every 7-10 days throughout the season. Discontinue application if signs of phytotoxicity appear (reddening of leaf veins or new growth inhibition) Early in the season alternating with Bavistin® FL or Spin ® Flo will assist in reducing the development of grey mould.
CROP	DISEASE	RATE	CRITICAL COMMENTS	
OTHER CROPS				
ORNAMENTALS	Bacterial leaf spot	500ml / 100L water	Begin spraying at first sign of disease and repeat every 10-14 days depending on weather conditions and disease pressure. Do not use on copper sensitive varieties. Small scale evaluations consisting of two sprays at a 14 days interval should be applied first to test for phytotoxicity.	
	Downy mildew	750ml / 100L water		
TOBACCO SEED BEDS	Wildfire Angular leaf spot (Pseudomonas syringae pv. tabaci) (QLD, NSW & VIC only)	1L / 100L water	Apply every 7 days.	
	Algae (QLD, WA only)		Apply when algae first appears.	

RATE			CRITICAL COMMENTS
In the following table, all rates are given for dilute spraying. For concentrate spraying, refer to the Application section			For all uses in this table: apply to dilute or concentration spraying equipment. Apply the same total amount of product to the target crop whether applying this product by dilute or concentrate spraying methods.
CROP	DISEASE	RATE	
FRUIT			
APPLES	Black spot (scab) (Venturia inaequalis)	500mL / 100L water	Apply at green tip. Apply as a dilute or concentrate spray. Do not use a concentration factor greater than 2. NOTE: Crop injury (russetting) may occur from late application. Discontinue use when green tip on the earliest developing bud reaches 1cm. Before applying recently introduced varieties, ascertain their tolerance of copper sprays from relevant authorities.
	APRICOTS	Shothole (Wilsonomyces carpophilus)	500mL / 100L
Freckle (Venturia carpophila)			
Bacterial gummosis (Pseudomonas syringae)		625mL / 100L water	<i>Autumn:</i> apply at 25-50% leaf fall. Apply again at 90-100% leaf fall. <i>Winter:</i> Apply in mid-winter <i>Spring:</i> Apply at first sign of bud movement. Repeat application 7-10days later.
		500mL/ 100L water (NSW only)	Apply as a dilute or concentrate spray. Do not use a concentration factor greater than 2.
		325mL / 100L water (NSW, VIC, SA, WA only)	Apply 1 week after petal fall. Repeat application 7-10 days later. These sprays control high leaf population of the bacteria in mid to late spring. Apply as a dilute or concentrated spray. Do not use a concentration factor greater than 2.

CROP	DISEASE	RATE	CRITICAL COMMENTS
AVOCADOES	Anthracnose (Colletotrichum gloeosporioides) Cercospora spot (Pseudocercospora purpurea) Sooty blotch (Akaropeltopsis sp.) (QLD, NSW, VIC, SA, WA only)	500mL / 100L water	Spray every 4 weeks from the end of flowering to harvest. During extended wet weather. Spray every 14 days. Start using Copperguard preferably during low infestation as a last spray in a spray program. Apply as a dilute or concentrate spray. Do not use a concentration factor greater than 3.
	Phytophthora stem canker	Stem application: 250mL / L water or 250mL/L water based paint	Mix to a smooth consistency. Apply only to stems of trees wherever cankers appear, after removing dead tissue. Repeat applications up to a maximum of 5 per season until natural healing has commenced. Application with paint carrier may only require 1 or 2 treatments in a season.
CHERRIES	Shothole (Wilsonomyces carpophilus)	500mL / 100L water	Spray when buds are swelling but BEFORE and WITHIN ONE WEEK OF BUD OPENING. Apply as a dilute or concentrate spray. Do not use concentration factor greater than 2.
	Bacterial gummosis/ canker (Pseudomonas syringae)	625mL / 100L water (VIC, TAS, SA, WA only)	<i>Autumn:</i> Apply at 25-50% leaf fall. Apply again at 90-100% leaf fall. <i>Winter:</i> Apply in mid winter <i>Spring:</i> Apply at first sign of bud movement. Apply as a dilute or concentrate spray. Do not use a concentration level greater than 2.
		500mL / 100L water (NSW only)	
		325mL / 100 L water (NSW, VIC, SA, WA only)	Apply 1 week after petal fall. Repeat application 7-10 days later. These sprays control the high leaf population of the bacteria in mid to late spring. Apply as a dilute or concentrate spray. Do not use a concentration factor greater than 2.
CITRUS	Black spot (Guignardia citricarpa) Melanose (Diaporthe citri) Smoky blotch (Gloeodes pomigena) Scab (Elsinoe fawcettii)	500mL - 750mL / 100L water plus 300-600mL / ha Nu-film®-17	Apply at petal fall. Apply the higher rate in coastal districts. Apply as a dilute spray only.
	Phytophthora stem canker	Stem application: 250mL/L water or 250mL/L water based paint	Mix to a smooth consistency. Apply only to stems of trees wherever cankers appear, after removing dead tissue. Repeat applications up to a maximum of 5 per season until natural healing has commenced. Application with paint carrier may only require 1 or 2 treatments in a season.

CROP	DISEASE	RATE	CRITICAL COMMENTS
KIWIFRUIT	Phytophthora stem canker	Stem application: 250mL/L water or 250mL/L water based paint	Spray only stems of trees wherever cankers appear, after removing dead tissue. Repeat applications up to a maximum of 5 per season until natural healing has commenced. Application with paint carrier may only require 1 or 2 sprays in a season.
LYCHEES (LITCHIS)	Parasitic algae (cephaleuros virescens) (QLD, NSW only)	Stem application 250mL / L water or 250mL / L water based paint	Spray affected trunk and limbs until runoff occurs. Apply monthly during wet season. Apply as a dilute spray only.
	Lychee pepper spot (colletotrichum gloeosporioides)	1 L water / 100L water plus 300m-600ml / ha Nu-Film®-17	Spray every 4 weeks from the end of flowering to harvest. During extended wet weather, spray every 14 days. Apply as a dilute spray only.
	Phytophthora Stem canker	500mL / 100L water	Spray only stems of trees wherever cankers appear, after removing dead tissue. Repeat applications up to a maximum of 5 per season until natural healing has commenced. Application with paint carrier may only require 1 or 2 sprays in a season.
MANGOES	Anthracnose (Colletotrichum gloeosporioides, C acutatum) (NSW, QLD, VIC, SA, NT only)	750mL / 100L water	Spray every 4 weeks from end of flowering to harvest. During extended wet weather, spray every 14 days. Use in rotation with alternate chemistry. Apply as a dilute or concentrated spray. Do not use a concentration factor greater than 3.
	Bacterial black spot (Xanthomonas campestris pv. mangiferaeindicae)	500mL / 100L water	Apply at 2-4 week intervals from just after fruit set until harvest. The product is especially suit for application as the last two sprays at the end of a spray program to minimise visible residues. Apply as a dilute or concentrate spray. Do not use a concentration factor greater than 3.

CROP	DISEASE	RATE	CRITICAL COMMENTS
NECTARINES	Shot hole (Wilsonomyces carpophilus)	500mL/ 100L water	Spray when bud are swelling but BEFORE AND WITHIN ONE WEEK OF BUD OPENING. Apply as a dilute or concentrated spray. Do not use a concentration factor greater than 2.
	Leaf curl (Taphrina deformans)		CORRECT TIMING IS CRITICAL FOR EFFECTIVE CONTROL. Spray when buds are swelling but BEFORE AND WITHIN ONE WEEK OF BUD OPENING. For a given variety, the time of bud opening will vary from year to year, depending on the weather, and in any year it will vary between varieties. Thus, the bud development each year will determine the correct time of application. Blocks containing more than one variety may need to be treated more than once, to treat each variety at the correct time. Where leaf curl is more likely to be a severe problem based on previous experience, the following program should be followed; <ol style="list-style-type: none"> 1. AUTUMN– apply at leaf fall 2. Apply at the FIRST SIGN OF BUD SWELL and REPEAT ONE WEEK LATER. <p>Apply as a dilute or concentrate spray. Do not use a concentration factor greater than 2.</p>
	Phytophthora stem canker	Stem application 250mL/ L water or 250mL/ L water based paint	Spray only to stems of trees wherever cankers appear, after removing dead tissue. Repeat application up to a maximum of 5 sprays per season until natural healing is commenced. Application with paint carrier may only require 1 or 2 sprays in a season.
PASSIONFRUIT	Phytophthora Stem canker	Stem application 250mL/ L water or 250mL / water based paint	Spray only to stems of trees wherever cankers appear, after removing dead tissue. Repeat application up to a maximum of 5 sprays per season until natural healing is commenced. Application with paint carrier may only require 1 or 2 sprays in a season.

CROP	DISEASE	RATE	CRITICAL COMMENTS
PEACHES	Shothole (Wilsonomyces carpophilus)	500mL/ 100L water	Spray when buds are swelling but BEFORE and WITHIN ONE WEEK OF BUD OPENING. Apply as a dilute or concentrate spray. Do not use concentration factor greater than 2.
	Leaf curl (Taphrina deformans)		CORRECT TIMING IS CRITICAL FOR EFFECTIVE CONTROL. Spray when buds are swelling but BEFORE AND WITHIN ONE WEEK OF BUD OPENING. For a given variety, the time of bud opening will vary from year to year, depending on the weather, and in any year it will vary between varieties. Thus, the bud development in the orchid should be monitored each year to determine the correct time of application. Blocks containing more than one variety may need to be treated more than once, to treat each variety at the correct time. Where leaf curl is more likely to be a severe problem based on previous experience, the following program should be followed; <ol style="list-style-type: none"> 1. AUTUMN– apply at leaf fall 2. Apply at the FIRST SIGN OF BUD SWELL and REPEAT ONE WEEK LATER. <p>Apply as a dilute or concentrate spray. Do not use a concentration factor greater than 2.</p>
	Phytophthora Stem canker	Stem application 250mL/ L water or 250mL / water based paint	Spray only to stems of trees wherever cankers appear, after removing dead tissue. Repeat application up to a maximum of 5 sprays per season until natural healing is commenced. Application with paint carrier may only require 1 or 2 sprays in a season.
PEARS	Black spot (scab) (Venturia pirina)	500mL / 100L water	Apply at green tip. Apply as a dilute or concentrate spray. Do not use a concentration factor greater than 2. NOTE: Crop injury (russetting) may occur from late application. Discontinue use when green tip on the earliest developing bud reaches 1cm. Before applying to recently introduced varieties, ascertain their tolerance of copper sprays from relevant authorities.

CROP	DISEASE	RATE	CRITICAL COMMENTS
PLUMS	Shothole (Wilsonomyces carpophilus)	500mL/ 100L water	Spray when buds are swelling but BEFORE and WITHIN ONE WEEK OF BUD OPENING. Apply as a dilute or concentrate spray. Son not use concentration factor greater than 2.
	Phytophthora Stem canker	Stem application 250mL/ L water or 250mL / water based paint	Spray only to stems of trees wherever cankers appear, after removing dead tissue. Repeat application up to a maximum of 5 sprays per season until natural healing is commenced. Application with paint carrier may only require 1 or 2 sprays in a season.
TROPICAL FRUIT	Phytophthora Stem canker	Stem application 250mL/ L water or 250mL / water based paint	Spray only to stems of trees wherever cankers appear, after removing dead tissue. Repeat application up to a maximum of 5 sprays per season until natural healing is commenced. Application with paint carrier may only require 1 or 2 sprays in a season.
VINES Wine grapes & Table grapes	Downy mildew (Plasmopara viticola) Powdery mildew (Uncinula necator)	500mL/ 100L water	Apply when shoots are 10cm long and repeat at 10 to 14 day intervals or as necessary while weather conditions are highly favourable for infection. Use the higher rate when conditions are highly favourable for infection. Leaf damage may occur on copper sensitive varieties. Apply as a dilute or concentrate spray. Do not use a concentration factor greater than 3. Withholding period: Do not harvest for 4 weeks after application for wine grapes. Withholding period: Do not harvest for 1 day after application for table grapes.
NUTS			
ALMONDS	Shothole (Wilsonomyces carpophilus)	500mL / 100L water	Spray when buds are swelling but BEFORE and WITHIN ONE WEEK OF BUD OPENING. Apply as a dilute or concentrate spray. Do not use concentration factor greater than 2.

CROP	DISEASE	RATE	CRITICAL COMMENTS
ALMONDS (Cont)	Leaf curl (Taphrina deformans)		CORRECT TIMING IS CRITICAL FOR EFFECTIVE CONTROL. Spray when buds are swelling but BEFORE AND WITHIN ONE WEEK OF BUD OPENING. For a given variety, the time of bud opening will vary from year to year, depending on the weather, and in any year it will vary between varieties. Thus, the bud development each year will determine the variety in orchid should be monitored each year to determine the correct time of application. Blocks containing more than one variety may need to be treated more than once, to treat each variety at the correct time. Where leaf curl is more likely to be a severe problem based on previous experience, the following program should be followed; <ol style="list-style-type: none"> AUTUMN– apply at leaf fall Apply at the FIRST SIGN OF BUD SWELL and REPEAT ONE WEEK LATER. <p>Apply as a dilute or concentrate spray. Do not use a concentration factor greater than 2.</p>
MACADAMIAS	Phytophthora Stem canker (QLD, WA only)	Stem application 250mL/ L water or 250mL / water based paint	Mix to a smooth consistency. Apply only to stems of trees wherever cankers appear, after removing dead tissue. Repeat applications up to a maximum of 5 per season until natural healing has commenced. Application with paint carrier may only require 1 or 2 treatments in a season.
	Husk spot (Pseudocercospora sp.) (QLD, NSW, WA, NT only)	500mL / 100L water	Good spray penetration of foliage is essential. Apply from nut set (late September) to December. Apply at least 3 sprays at 3-4 week intervals. Apply as dilute or concentrate spray. Do not use a concentration factor greater than 2.
PECANS	Phytophthora Stem canker	Stem application 250mL/ L water or 250mL / water based paint	Apply to stems of trees wherever cankers appear, after removing dead tissue. Repeat applications up to a maximum of 5 per season until healing has commenced. Application with a paint carrier may only require 1 or 2 treatments in a season.
WALNUTS	Walnut blight (Xanthomonas campestris pv. juglandis)	750mL / 100L water plus 300m-600ml / ha Nu-Film®-17	Spray a minimum of three sprays at 7-10 day intervals, commencing when the catkins are partially opened. Further sprays may be necessary if conditions allow infection. Apply as a dilute spray only.

WITHHOLDING PERIODS:

Wine grapes

DO NOT HARVEST FOR 4 WEEKS AFTER APPLICATION.

Almonds, apples, apricots, Avocados, Bananas, Beans, Brassicas, Capsicums, Carrots, Celery, Cherries, Citrus, Cucurbits, Kiwifruit, Lettuce, Lychees (Litchis), Macadamias, Mangoes, Nectarines, Onions, Parsnips, Passionfruit, Peaches, Pears, Peas, Pecans, Plums, Potatoes, Red Beet, Rhubarb, Silver Beet, Spinach, Strawberries, Table Grapes, Tobacco, Tomatoes, Walnuts.

DO NOT HARVEST FOR 1 DAY AFTER APPLICATION.

GENERAL INSTRUCTIONS:

Fungicide Resistance Warning

Copperguard is a member of the multi-site activity group of fungicides. For fungicide resistance management Copperguard is a Group M1 fungicide. Some naturally occurring individual fungi resistant to Copperguard and other M1 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 Copperguard and other Group Y fungicides, this resulting in a reduction in efficacy and possible yield loss. Since the occurrence of resistant fungi is difficult to detect prior to use, SprayGro accepts no liability for any losses that may result from the failure of Copperguard to control resistant fungi.

Copperguard is to be used as a **preventative** spray, generally applied **before** or **at first sign of disease**. Many diseases infect plants \pm 2 weeks before symptoms appear, so applicants should preferably start before symptoms appear.

Mixing

Fill the spray tank to three quarters of the required volume of water. Add any tank-mix products to the spray tank first and check pH. The stability and efficacy of Copperguard is pH dependant.

DO NOT apply in a spray solution having a pH of < 6.0 as phytotoxicity may occur.

If pH > 7.0, adjust to pH 6-7 with a suitable buffer/acidifier. DO NOT use the phosphate buffer / acidifier.

Then, slowly pour the Copperguard into the spray tank, with the agitation system actively running. Thoroughly mix and top up to the required volume of water. Formation of an aquagel is normal, but will not clog the nozzles.

Important

It is essential that Copperguard be kept agitated throughout the entire mixing and spraying operation. Copperguard must be applied within one hour of the product being diluted with water, therefore mix only the amount that can be used.

All containers containing the concentrated product must be sealed properly once opened to prevent the loss of ammonia and possible formation of crystals.

Adjuvants

The addition of a sticker-spreader such as Nu-film® - 17 is recommended, especially when applying Copperguard to Brassicas, faba beans, peas and onions, irrespective of method of application. Use of oils and wetting agents is not recommended as these may enhance uptake of copper and increase phytotoxicity.

Application

In common with other non-systemic/preventative fungicides, application of Copperguard should aim to thoroughly cover all plant surfaces. DO NOT apply in water volumes resulting in application rates less than 2.5L Copperguard / ha unless otherwise specified.

Continuous agitation of the spray solution is necessary or setting of the aquagel may occur. Good by-pass agitation is adequate.

Compatibility

The stability and efficacy of Copperguard is pH dependant and should not be mixed with acidifying agents unless otherwise required to decrease the pH when it is higher than 7 (see mixing section)

Copperguard is compatible with a wide range of wettable powder, water dispersible granule, suspension concentrate and emulsifiable concentrate formulations of commonly used fungicides, insecticides and miticides. Mixtures with more than one of the above products are not recommended. Such mixtures may be ineffective or may cause serious damage. Copperguard may NOT be compatible with some foliar fertilizers (primarily because of pH) and a test should be conducted before use. Copperguard should not be mixed with Ca-EDTA, Bavistan® or Thiovit® jet (at higher rates only).

Special Instructions for Tree and Vine Crops:

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 excess 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 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 the concentrate spraying can then be calculated in the following way:

Example Only

1. Dilute spray volume as a determined above; e.g. 1500L/ ha
 2. Your chosen concentrate spray volume: e.g. 500L/ha
 3. The concentration factor in this example is 3 X (i.e. $1500L \div 500L = 3$)
 4. If the dilute label rate is 500mL / 100L, then the concentrate rate becomes 3 x 500, i.e. 1500mL/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.
 - Do not use a concentration factor greater than that specified on the Critical Comments and the following table.

Crop	Maximum Concentration Factor
Almonds & Macadamias	2 times
Deciduous Fruit	2 times
Avocados & Mangoes	3 times
Vines	3 times
Citrus, Lychees & Walnuts	Dilute application only

- For further information on concentrate spraying, users are advised to consult relevant industry guidelines, undertake appropriate competency training follow industry Best practices.

PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT:

DO NOT contaminate streams, river 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 cool, well ventilated area. Do not store for prolonged periods in direct sunlight. All containers containing the concentrated product must be sealed properly once opened to prevent loss of ammonia and possible formation of crystals.

Triple or (preferably) pressure rinse containers before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on-site.

If not recycling, break, crush or puncture and deliver empty packaging to an approved waste management facility.

Drummaster eligible containers, not applicable in 1000 litre container. For 1000 litre IBC empty contents fully. Close all valves and return to the manufacturer for refill or storage.

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 13 11 26.

MATERIAL SAFETY DATA SHEET:

Additional Information is listed in the Material Safety Data Sheet (MSDS) available from SprayGro Liquid Fertilizers on (08) 8447 7266 or spraygro.com.au

APVMA APPROVAL NUMBER:

Pack Size / Label Component Booklet	APVMA Approval Number 61660/0309
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COMPANY WARRANTY:

Although this remedy has been extensively tested under a large variety of conditions the registration holder does not warrant that it will be efficacious under all conditions because the action and effect thereof may be affected by factors such as abnormal climatic and storage conditions; quality of dilution water ; compatibility with other substances not indicated on the label and the occurrence of resistance of the disease against the remedy concerned as well as by the method, time and accuracy of application. The registration holder furthermore does not accept responsibility for damage to] crops, vegetation, the environment or harm to man or animal or the lack of performance of the remedy concerned due to failure of the user to follow the label instructions or to the occurrence of conditions which could have been foreseen in terms of the registration. Consult the supplier in the event of uncertainty.

- ® *Nu-Film-17 is the registered trademark of Miller Chemical Fertilizer Corporation, USA*
- ® *Bavistin is the registered trademark of BASF*
- ® *Spin is the registered trademark of Bayer*
- ® *Thiovit is the registered trademark of a Syngenta Group Company*

This product is not classified as a dangerous good under the Australian Dangerous Goods Code, 6th Edition, for transport by Rail and Road.

IN EMERGENCY ONLY:
PHONE 1800 033 111
24 hours, Australia wide



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