

POISON
KEEP OUT OF REACH OF CHILDREN
READ SAFETY DIRECTIONS BEFORE OPENING OR USING

Blue Shield® DF

COPPER FUNGICIDE

ACTIVE CONSTITUENT: 500 g/kg COPPER present as copper hydroxide

GROUP	M1	FUNGICIDE
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For the control of various diseases of fruit and vegetables as specified in the DIRECTIONS FOR USE Table

GENERAL INSTRUCTIONS

Fungicide Resistance Warning

Blue Shield DF Copper Fungicide is a member of the multi-site activity group of fungicides. For fungicide resistance management Blue Shield is a Group M1 fungicide.

Some naturally occurring individual fungi resistant to Blue Shield and other Group 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 Blue Shield and other Group M1 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, Bayer CropScience Pty Ltd accepts no liability for any losses that may result from the failure of Blue Shield to control resistant fungi.

Mixing

Fill the spray tank to three quarters of the required volume with water, then **slowly** pour Blue Shield into the spray tank, with the agitation system actively moving. Add tank-mix products after Blue Shield is thoroughly mixed. Top up to the required volume with water. Pre-mixing Blue Shield with a small quantity of water is NOT recommended.

Application

Good disease control requires even, thorough coverage of the target area. Application should be made using appropriate spray equipment and sufficient water to provide adequate penetration and coverage. Equipment settings and water volume may need to vary, depending on the growth stage of the crop.

Instructions for 'other' crops

High volume

Mix specified rates of product per 100 L water and spray plants to "point of run-off" stage, thoroughly covering all plant surfaces.

Low volume

Use specified rates per hectare in a convenient volume of water, using effective low volume boom sprays, misters etc. Aim to apply an even small droplet coverage over all plant surfaces. Water volumes may range from 30 to 500 L/ha depending on crop and equipment.

Instructions for vegetables

General

Thorough coverage of the plant is essential of maximum effectiveness. To achieve thorough coverage:

1. Spray volumes need to be increased as the plants grow.
2. The configuration of the sprayer may need to be altered as the plants grow and change shape.

The coverage provided by the sprayer should be checked prior to each application and adjusted if necessary. This should only be done with water plus any required wetting agents.

Dilute sprays

Apply using a sprayer fitted with cone nozzles operated at pressures that produce a MEDIUM to FINE spray. The following volumes per sprayed hectare are suggested as a guide, since the required volumes will vary with foliage density and size of the plants.



Carrots, parsnips, potatoes, silver beet, spinach: 400 L on plants up to 10 cm tall, increasing to 1000 to 1200 L on mature plants.

Cucurbits, lettuce: 400 L on plants up to 10 leaves, increasing to 1000 to 1200 L on mature plants.

Brassicas, trellis tomatoes: 400 L on plants up to 10 leaves, increasing to 1200 to 1500 L on mature plants.

Beans, capsicums, celery, faba beans, French beans, peas, rhubarb, bush tomatoes: 400 L on plants up to 15 cm tall, increasing to 1000 to 1200 L on mature plants.

Red beet: 400 L on plants up to 8 leaves, increasing to 800 L on mature plants.

Special instructions for tree and vine crops

Dilute spraying

- ◆ Use a sprayer designed to apply high spray volumes, up 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 spray volume to cover the crop to the point of run-off. Avoid excessive run-off.
- ◆ The required spray volume to achieve point of run-off may be determined by applying different test volumes, using different settings on the sprayer, or from industry guidelines or other expert advice.
- ◆ Add the amount of product specified in the Directions for Use table for each 100 L water. Spray to the point of run-off.
- ◆ The required dilute spray volume to achieve point of run-off will change and the sprayer set up and operation may also need to be changed, as the crop grows.
- ◆ Always apply sufficient water to cover the crop to the point of run-off, otherwise underdosing will occur and disease control may be inadequate.

Concentrate spraying

- ◆ Use a sprayer designed and set up for concentrate spraying (that is a sprayer which applies spray 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 spray 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 1500 L/ha
 2. Your chosen concentrate spray volume: For example 500 L/ha
 3. The concentration factor in this example is: 3 X (i.e. $1500\text{ L} \div 500\text{ L} = 3$)
 4. If the dilute label rate is 105 g/100 L, then the concentrate rate becomes 3 x 105, that is 315 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.
 - ◆ Do not use a concentrate rate higher than that specified in the Critical Comments for the relevant crop.
 - ◆ Concentrate spraying of this product is only appropriate for apples, apricots, avocados, cherries, grapevines, mangoes, nectarines, peaches, pears and plums.
 - ◆ For concentrate application use a minimum spray volume of 250 L/ha.
 - ◆ For further information on concentrate spraying, users are advised to consult relevant industry guidelines, undertake appropriate competency training and follow industry Best Practices.

Wetting agents

The addition of a wetting agent is required when Blue Shield DF Copper Fungicide is applied to brassicas, faba beans, peas and onion. Where a wetting agent is not required for Blue Shield, one may be added if required for other pesticides.

Compatibility

This product is compatible with wettable powder, water dispersible granule, suspension concentrate and most emulsifiable concentrate formulations of most commonly used fungicides, insecticides and miticides.

For the latest compatibility recommendations contact the Bayer CropScience Technical Enquiry Hotline 1800 804 479 or your local Bayer CropScience representative.

PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT

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

DRIFT WARNING

DO NOT apply under weather conditions, or from spraying equipment, that may cause spray to drift onto adjacent crops, crop lands, pasture or livestock.

STORAGE AND DISPOSAL

Store in the closed, original container in a dry, cool, well-ventilated area out of direct sunlight. 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. Do not use empty container for any other purpose.

SAFETY DIRECTIONS

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

FIRST AID

If poisoning occurs, contact a doctor or Poisons Information Centre (telephone 13 11 26). If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.

DATA SHEET

Additional information is listed in the Safety Data Sheet, which can be obtained from www.crop.bayer.com.au.

EXCLUSION OF LIABILITY

This product must be used strictly as directed, and in accordance with all instructions appearing on the label and in other reference material. So far as it is lawfully able to do so, Bayer CropScience Pty Ltd accepts no responsibility for loss or damage arising from failure to follow such directions and instructions.

APVMA Approval No.: 46869/104211

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FOR 24 HOUR SPECIALIST ADVICE IN EMERGENCY ONLY PHONE 1800 033 111
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DIRECTIONS FOR USE

RESTRAINTS

DO NOT apply when either hot or frost prone conditions prevail.

DO NOT apply during the hottest part of the day when temperatures exceed 35 °C.

DO NOT apply when slow drying conditions prevail.

DO NOT apply to copper-shy crops or cultivars.

DO NOT apply if it is likely to rain before the spray is dry.

DO NOT apply to wet crops.

DO NOT apply in spray solutions with a pH of less than 6.5.

VEGETABLES

CROP	DISEASE	STATE	RATE		CRITICAL COMMENTS
			For further information refer to the Application Section in the GENERAL INSTRUCTIONS		
			High Vol: Per 100 L	Low Vol: Per ha	
Beans	Common blight	All States	105 g	1.2 kg	Apply as a protectant at first sign of infection from time plants are 15 to 30 cm high. Repeat every 10 to 14 days as required.
	Bacterial brown spot				Spray within 21 days of emergence and repeat at 10 to 14 day intervals.
	Halo blight		105 - 160 g	1.2 - 1.4 kg	Apply as a protectant at first sign of infection when plants are 15 to 20 cm high. Repeat every 10 to 14 days as required. Use higher rate when conditions favour disease.
Beans, faba beans	Rust, chocolate spot	All States	105 g	1.2 kg	Apply as a preventative spray when conditions favour disease development. Repeat every 10 to 14 days while conditions allow infection.
Brassicas	Black rot, peppery leaf spot, ring spot, downy mildew	All States	105 g	1.2 kg	Apply at the first signs of disease and repeat at 10 to 14 day intervals, while conditions allow infection. CROP DAMAGE WARNING: Cupric hydroxide predisposes cabbages to frost damage. Cabbages should not be treated with the product if frosts are likely, since crop damage may occur. Do not use on copper shy varieties.
Capsicums	Bacterial spot, bacterial canker	All States	105 g	1.2 kg	Field - Begin spraying at first sign of disease and repeat every 7 to 14 days depending upon weather conditions and severity of disease. Use the shortest interval when conditions are highly favourable for infection. This product used as directed will reduce the spread of bacterial canker but will not control seed or soil borne infection. Seedbeds - Under wet weather conditions spray every 7 days.
Carrots	Leaf spot	All States	105 g	-	Spray at first sign of disease. Repeat every 10 to 14 days while conditions allow infection.
Celery	Leaf spot	All States	105 g	-	Spray every 10 to 14 days. When weather conditions favour disease (i.e. cool weather) spray every 7 days.
	Bacterial soft rot	All States except Vic			
		Vic only			
Cucurbits	Angular leaf spot, bacterial leaf spot	All States	105 g	-	Spray at first sign of disease and repeat every 7 to 10 days.
Lettuce	Downy mildew, bacterial leaf spot, anthracnose	All States	105 g	1.2 kg	Apply at first sign of disease and repeat every 7 to 10 days if necessary. Alternating treatment between this product and Polyram® DF is desirable. Do not use on copper shy varieties. This product predisposes lettuce to frost damage. Lettuce should not be treated with the product if frosts are likely since crop damage may occur. Do not use on copper shy varieties.
Onions	Downy mildew	All States	105 g	1.2 kg	Spray at first sign of disease. Repeat application at 10 day intervals.

CROP	DISEASE	STATE	RATE		CRITICAL COMMENTS
			For further information refer to the Application Section in the GENERAL INSTRUCTIONS		
			High Vol: Per 100 L	Low Vol: Per ha	
Parsnips	Leaf spots	Vic, SA, WA only	105 g	1.2 kg	Spray at first sign of disease. Repeat application every 10 to 14 days if necessary.
Peas	Ascochyta blight, bacterial blight	All States	105 g	1.2 kg	Spray at first sign of disease. Repeat application every 10 to 14 days.
Potatoes	Target spot (early blight), Irish blight (late blight)	All States	105 g	1.2 kg	Spray every 10 to 14 days as necessary until maturity.
Red Beet	Downy mildew, rust	All States	105 g	1.2 kg	Spray from seedling stage and repeat every 10 to 14 days if necessary.
Rhubarb	Crown rot	All States	105 g	-	Dip rhubarb crowns before planting.
	Downy mildew				Spray every 10 to 14 days.
Silver Beet	Downy mildew	All States	105 g	1.2 kg	Spray from seedling stage and repeat every 10 to 14 days if necessary.
Spinach	Downy mildew	All States	105 g	1.2 kg	Spray from seedling stage and repeat every 10 to 14 days if necessary.
Tomatoes	Target spot (early blight), septoria leaf spot	All States	105 g	1.2 kg	At onset of disease spray every 7 to 14 days depending on severity of disease and weather conditions.
	Bacterial spot, bacterial speck, bacterial canker		85 to 105 g	1.0 to 1.2 kg	Seedbeds - Spray every 7 days under wet weather conditions. Fields - Begin applying at first sign of disease and spray every 7 to 14 days depending on weather and disease severity. This product will minimise the spread of bacterial canker but will not control seed or soil borne infection.
	Irish blight (late blight)		105 g	1.2 kg	Begin applying at first sign of disease and repeat every 10 to 14 days. At seedling stage spray only when necessary (minimum sprays) as this may inhibit growth.

TREE and VINE CROPS - FRUIT

RATE				CRITICAL COMMENTS
In the following table, all rates given are for dilute spraying. Where appropriate, for concentrate spraying, refer to the Special Instructions for Tree and Vine Crops section in the GENERAL INSTRUCTIONS.				
CROP	DISEASE	STATE	RATE/100 L (Dilute spraying)	For concentrate spraying do not use at rates greater than those specified for each crop.
Apples	Black spot	All States	105 g	Apply at green tip and repeat 10 to 14 days later if conditions favour disease (extended wet weather). Refer to Department spray charts for recommendations on timing rates and precautions that may be necessary. For concentrate spraying, do not use at rates greater than 210 g per 100 L of water (i.e. at a concentration factor greater than 2 X).
Apricots	Shothole, freckle	All States	105 g	Spray at bud swell prior to earliest signs of leaf/bud movement. Spray at least one post harvest application. For concentrate spraying, do not use at rates greater than 210 g per 100 L water (i.e. at a concentration factor greater than 2 X).
	Bacterial canker	Vic, Tas, SA, WA only	135 g	Autumn: Apply at 25 to 50 % leaf fall. Apply again at 90 to 100 % leaf fall. Winter: Apply in mid-winter. Spring: Apply at first sign of bud movement. Repeat application 7 to 10 days later. For concentrate spraying, do not use at rates greater than 270 g per 100 L water (i.e. at a concentration factor greater than 2 X).
		NSW only	105 g	Spring: Apply at first sign of bud movement. Repeat applications 7 to 10 days later. For concentrate spraying, do not use at rates greater than 210 g per 100 L water (i.e. at a concentration factor greater than 2 X).
		NSW, Vic, Tas, SA, WA, only	70 g	Apply 1 week after petal fall. Repeat application 7 to 10 days later. These sprays control the high leaf population of the bacteria in mid to late spring. For concentrate spraying, do not use at rates greater than 140 g per 100 L water (i.e. at a concentration factor greater than 2 X).
Avocadoes	Anthracnose	All States	105 g	Spray every 4 weeks from flowering to harvest. During extended wet periods spray every 14 days. For concentrate spraying, do not use at rates greater than 315 g per 100 L water (i.e. at a concentration factor greater than 3 X).
	Refer also to FRUIT AND NUTS – PHYTOPHTHORA STEM CANCKER section			

RATE In the following table, all rates given are for dilute spraying. Where appropriate, for concentrate spraying, refer to the Special Instructions for Tree and Vine Crops section in the GENERAL INSTRUCTIONS.				CRITICAL COMMENTS Where appropriate, 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. For concentrate spraying do not use at rates greater than those specified for each crop.
CROP	DISEASE	STATE	RATE/100 L (Dilute spraying)	
Cherries	Shothole, freckle	All States	105 g	Spray at bud swell prior to early sign of leaf/bud movement. Apply at least 1 post-harvest spray. For concentrate spraying, do not use at rates greater than 210 g per 100 L water (i.e. at a concentration factor greater than 2 X).
	Bacterial canker/ gummosis	Vic, Tas, SA, WA only	135 g	Autumn: Apply at 25 to 50 % leaf fall. Apply again at 90 to 100 % leaf fall. Winter: Apply in mid-winter. Spring: Apply at first sign of bud movement. Repeat application 7 to 10 days later. For concentrate spraying, do not use at rates greater than 270 g per 100 L water (i.e. at a concentration factor greater than 2 X).
		NSW only	105 g	Spring: Apply at first sign of bud movement. Repeat applications 7 to 10 days later. For concentrate spraying, do not use at rates greater than 110 g per 100 L water (i.e. at a concentration factor greater than 2 X).
		NSW, Vic, Tas, SA, WA, only	70 g	Apply 1 week after petal fall. Repeat application 7 to 10 days later. These sprays control the high leaf population of the bacteria in mid to late spring. For concentrate spraying, do not use at rates greater than 140 g per 100 L water (i.e. at a concentration factor greater than 2 X).
Citrus	Black spot, melanose	NSW, Vic, SA only	105 g	Spray at flower petal fall. Apply only as a dilute spray.
	Black spot, melanose, smoky blotch, scab	All States except NSW, Vic, SA	105 to 160 g + 600 mL summer oil	Spray at a half to three quarter flower petal fall. Apply the higher rate in coastal districts. Apply only as a dilute spray.
	Refer also to FRUIT AND NUTS – PHYTOPHTHORA STEM CANKER section			
Grapevines	Downy mildew	All States	95 -135 g	First spray when shoots are 10 cm long and re-apply as necessary. Use higher rates when infection levels are high. Leaf damage may occur on 'copper-shy' varieties. For concentrate spraying, do not use at rates greater than 405 g per 100 L water (i.e. at a concentration factor greater than 3 X).
Kiwifruit	Refer to FRUIT AND NUTS – PHYTOPHTHORA STEM CANKER section			
Lychees	Parasitic algae	Qld and NSW only	210 g + suitable wetting agent	Apply to affected trunks and limbs until runoff occurs. Apply monthly during the wet season. Apply as a dilute application only.
	Refer also to FRUIT AND NUTS – PHYTOPHTHORA STEM CANKER section			

RATE				CRITICAL COMMENTS
In the following table, all rates given are for dilute spraying. Where appropriate, for concentrate spraying, refer to the Special Instructions for Tree and Vine Crops section in the GENERAL INSTRUCTIONS.				Where appropriate, 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.
CROP	DISEASE	STATE	RATE/100 L (Dilute spraying)	For concentrate spraying do not use at rates greater than those specified for each crop.
Mangoes	Anthracnose	Qld, NSW, SA, WA, NT only	160 g	Spray every 4 weeks from flowering to harvest. During extended wet weather, spray every 14 days. When using a per hectare rate apply in not less than 300 litres of water per hectare. Use in rotation with alternate chemistry. For concentrate spraying, do not use at rates greater than 320 g per 100 L water (i.e. at a concentration factor greater than 2 X).
	Bacterial black spot		105 to 160 g	Apply at first sign of infection or as a preventative spray. Repeat at 10 to 14 day intervals while conditions allow infection. Use higher rate when conditions are favourable for infection. Use in rotation with alternate chemistry. For concentrate spraying, do not use at rates greater than 320 g per 100 L water (i.e. at a concentration factor greater than 2 X).
Nectarines	Leaf curl	All States	105 g	Spray at bud swell prior to early signs of leaf/bloom development. For concentrate spraying, do not use at rates greater than 110 g per 100 L water (i.e. at a concentration factor greater than 2 X).
	Shothole			Apply when buds are swelling but before and within one week of bud opening.
Refer also to FRUIT AND NUTS – PHYTOPHTHORA STEM CANKER section				
Passionfruit	Refer to FRUIT AND NUTS – PHYTOPHTHORA STEM CANKER section			
Peaches	Leaf curl, shothole	All States	105 g	Spray at bud swell prior to early signs of leaf/bloom development. For concentrate spraying, do not use at rates greater than 110 g per 100 L water (i.e. at a concentration factor greater than 2 X).
	Refer also to FRUIT AND NUTS – PHYTOPHTHORA STEM CANKER section			
Pears	Black spot (scab)	All States	105 g	Spray at green tip and repeat 10 to 14 days later if necessary. For concentrate spraying, do not use at rates greater than 110 g per 100 L water (i.e. at a concentration factor greater than 2 X). Before applying to recently introduced varieties, ascertain their tolerance of copper sprays from relevant authorities.
Plums	Shothole	All States	105 g	Spray at bud swell prior to early signs of leaf/bloom development. For concentrate spraying, do not use at rates greater than 110 g per 100 L water (i.e. at a concentration factor greater than 2 X).
	Refer also to FRUIT AND NUTS – PHYTOPHTHORA STEM CANKER section			
Tropical fruit (other)	Refer to FRUIT AND NUTS – PHYTOPHTHORA STEM CANKER section			

TREE and VINE CROPS - NUTS

RATE				CRITICAL COMMENTS
CROP	DISEASE	STATE	RATE/100 L (Dilute spraying)	
Almonds	Leaf curl, shothole	All States	105 g	Spray at bud swell prior to early signs of leaf/bloom development.
Macadamias	Husk spot	Qld, NSW, NT only	105 g	Good spray penetration of foliage is essential. Apply from early nut set (September to December). Apply at least 3 sprays at 3 to 4 week intervals.
	Anthracnose			Good coverage inside the tree is essential. Spray from early summer (December) to May at monthly intervals.
	Pink limb blight			Good coverage of infected limbs from early summer (December) to May at monthly intervals.
	Refer also to FRUIT AND NUTS – PHYTOPHTHORA STEM CANKER section			
Pecans	Refer to FRUIT AND NUTS – PHYTOPHTHORA STEM CANKER section			
Walnuts	Walnut blight	All States	160 + 175 mL summer oil	Apply first spray at early pre-bloom when catkins are partially expanded. Make three additional applications during bloom and early nutlet stage at 7 to 10 day intervals. Additional applications may be necessary when frequent rainfall occurs. Add 175 mL of summer oil/100 L spray.

OTHER CROPS

CROP	DISEASE	STATE	RATE/100 L	CRITICAL COMMENTS
Bananas	Cercospora leaf spot	Qld, NSW, WA only	105 g + 600 mL summer oil	Spray monthly from December to May when weather conditions favour disease. Ensure complete coverage.
	Refer also to FRUIT AND NUTS – PHYTOPHTHORA STEM CANKER section			
Strawberries	Leaf spot, grey mould	Vic, Tas, SA, WA only	105 g	Spray when plants are established and continue on a 7 to 10 day schedule throughout the season. Discontinue application if signs of phytotoxicity appear (reddening of leaf veins or new growth inhibition). Early in the season alternating with carbendazim will assist in reducing the development of grey mould.
Tobacco seed beds	Wildfire, angular leaf spot	Qld, NSW, Vic, WA only	210 g	Apply every 7 days.
	Algae	Qld, WA only		Apply when algae first appear.

FRUIT AND NUTS - PHYTOPHTHORA STEM CANKER

CROP	DISEASE	STATE	RATE	CRITICAL COMMENTS
Avocadoes	Phytophthora stem canker	Qld, NSW, WA only	55 g/L water or 55 g/L of water based paint	Mix to a smooth consistency. Apply only to stems of trees or vines 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.
Citrus		Qld, NSW only		
Macadamias		Qld, WA only		
Kiwifruit		Qld, NSW, WA only		
Lychees				
Nectarines				
Passionfruit				
Peaches				
Pecans				
Plums				
Tropical fruit (other)				
Bananas		NSW, WA only		

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

WITHHOLDING PERIOD

Crops - DO NOT HARVEST FOR 1 DAY AFTER APPLICATION.