

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

QUANTUM

# ProTeb 420 EC

## FUNGICIDE

ACTIVE CONSTITUENT: 210 g/L PROTHIOCONAZOLE

210 g/L TEBUCONAZOLE

SOLVENT: 507 g/L N-(N-OCTYL)-2-PYRROLIDONE

GROUP **3** FUNGICIDE

For the control of various diseases in barley, canola, mustard, oats, triticale and wheat as specified in the Direction for Use table.

APVMA Approval No.: 92354/149932

**EC** Formulation Type  
Emulsifiable  
Concentrate

**BE PROUDLY  
AUSTRALIAN**

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 **QUANTUM  
AGROSCIENCES**

## DIRECTIONS FOR USE

### Restraints:

**CEREALS – CANOLA AND MUSTARD:** A maximum of two applications may be made per cereal, canola or mustard crop.

### SPRAY DRIFT RESTRAINTS

Specific definitions for terms used in this section of the label can be found at [www.apvma.gov.au/spraydrift](http://www.apvma.gov.au/spraydrift).

DO NOT allow bystanders to come into contact with the spray cloud.

DO NOT apply in a manner that may cause an unacceptable impact to native vegetation, agricultural crops, landscaped gardens and aquaculture production, or cause contamination of plant or livestock commodities, outside the application site from spray drift. The buffer zones in the relevant buffer zone table/s below provide guidance but may not be sufficient in all situations. Wherever possible, correctly use application equipment designed to reduce spray drift and apply when the wind direction is away from these sensitive areas.

DO NOT apply unless the wind speed is between 3 and 20 kilometres per hour at the application site during the time of application.

DO NOT apply if there are hazardous surface temperature inversion conditions present at the application site during the time of application. Surface temperature inversion conditions exist most evenings one to two hours before sunset and persist until one to two hours after sunrise.

DO NOT apply by a boom sprayer unless the following requirements are met:

- Spray droplets not smaller than a MEDIUM spray droplet size category;
- Minimum distances between the application site and downwind sensitive areas (see 'Mandatory buffer zones' section of the following table titled 'Buffer zones for boom sprayers') are observed.

<b>Table 1. Buffer zones for boom sprayers</b>	
<b>Application Rate</b>	<b>Mandatory downwind buffer zones</b>
	<b>Natural aquatic areas</b>
Up to 450 mL/ha	5 metres

DO NOT apply by aircraft unless the following requirements are met:

- Spray droplets not smaller than a MEDIUM spray droplet size category;
- For maximum release heights above the target canopy of 3 m or 25% of wingspan or 25% of rotor diameter whichever is the greatest, minimum distances between the application site and downwind sensitive areas (see 'Buffer zones section of the following table titled 'Buffer zones for aircraft') are observed.

<b>Table 2. Buffer zones for aircraft</b>		
<b>Application Rate</b>	<b>Type of aircraft</b>	<b>Mandatory downwind buffer zones</b>
		<b>Natural aquatic areas</b>
Up to 300 mL/ha	Fixed-wing	80 metres
	Helicopter	60 metres
Up to 450 mL/ha	Fixed-wing	180 metres
	Helicopter	120 metres

CROP	STATE	DISEASE	RATE	CRITICAL COMMENTS
Barley	All States	Net form net blotch ( <i>Pyrenophora teres f. teres</i> )	150 to 300 mL/ha	Monitor crops from mid tillering. On susceptible varieties apply at the first sign of disease development. Monitor and reapply within 14 to 21 days if conditions favour disease development. Use the higher rates (up to 300 mL/ha) where conditions favour severe disease. Where lower rates are used apply with a suitable adjuvant (refer to Use of Adjuvant).
		Spot form net blotch ( <i>Pyrenophora teres f. maculata</i> )		Monitor crops from mid tillering. Use the higher rate in higher yielding crops where conditions favour disease development or susceptible varieties are grown.
		Powdery mildew ( <i>Blumeria graminis f.sp. hordei</i> )		Monitor crops from mid tillering (earlier if no effective seed treatment has been applied). On susceptible varieties apply at the first sign of disease development. Monitor and reapply within 14 to 21 days if conditions favour disease development. Use the higher rates (up to 300 mL/ha) where conditions favour severe disease. Where lower rates are used apply with a suitable adjuvant (refer to Use of Adjuvant).
		Leaf scald ( <i>Rhynchosporium secalis</i> )		Monitor crops from late tillering. Apply at the first sign of disease development. Monitor and reapply within 14 to 21 days if conditions favour disease development. Use the higher rates (up to 300 mL/ha) where conditions favour severe disease, or disease is established in the lower canopy. Where lower rates are used apply with a suitable adjuvant (refer to Use of Adjuvant).
		Leaf rust ( <i>Puccinia hordei</i> )	150 to 300 mL/ha	

CROP	STATE	DISEASE	RATE	CRITICAL COMMENTS
Canola and Mustard (oilseed Cultivars, Brassica juncea)	All States	Blackleg ( <i>Leptosphaeria maculans</i> )	375 to 450 mL/ha	Apply at the 4 to 6 leaf crop stage of blackleg susceptible varieties (blackleg ratings of MS or lower) or in situations of high blackleg risk (refer to General Instructions – Disease control in Canola and Mustard). Will reduce lodging and stem canker from blackleg. A follow up application may be required at green bud stage in high disease risk situations or where an effective blackleg seed treatment has not been used.
		Sclerotinia stem rot ( <i>Sclerotinia sclerotiorum</i> )		Apply Quantum ProTeb 420 EC Fungicide between 20 and 50% (full bloom) flowering. For best results apply as a preventative application at 20-30% flowering prior to significant disease expression (refer to <b>General Instructions – Disease control in Canola and Mustard</b> ). Good coverage throughout the entire canopy is essential. Using a water rate at the higher end of the range (i.e. 100 L/ha for ground application and 30 L/ha for aerial application) will improve spray coverage. Apply the higher rate (450 mL/ha) under high disease pressure.
Oats	All States	Stem rust ( <i>Puccinia graminis f.sp. avenae</i> )	300 mL/ha + adjuvant (refer to <b>Use of Adjuvant</b> )	Monitor crops from early stem elongation, and on susceptible varieties apply at the first sign of infection. Refer to <b>General Instructions – Disease control in Oats</b> , for potential risks associated with application to oats.
		Leaf rust ( <i>Puccinia coronata f.sp. avenae</i> )		Monitor crops from early stem elongation, and on susceptible varieties apply at the first sign of infection. Refer to General Instructions – Disease control in Oats, for potential risks associated with application to oats.

CROP	STATE	DISEASE	RATE	CRITICAL COMMENTS
Oats – <i>continued</i>	All States	Septoria blotch ( <i>Phaeosphaeria avenaria</i> )	150 to 300 mL/ha	<p>Monitor crops from early tillering and on susceptible varieties apply at the first sign of infection.</p> <p>Use the higher rate (up to 300 mL/ha) in higher yielding crops where conditions favour disease development or susceptible varieties are grown.</p> <p>Continue to monitor crops after application. Re-application may be required if conditions favour disease development.</p> <p>Where lower rates are used, apply with a suitable adjuvant (refer to Use of Adjuvant). Refer to General Instructions — Disease control in Oats, for potential risks associated with application to oats.</p>
Wheat	All States	Stripe rust ( <i>Puccinia striiformis</i> )	150 to 300 mL/ha + adjuvant (refer to <i>Use of Adjuvant</i> )	<p>Monitor crops from early stem elongation, and on susceptible varieties apply at the first sign of infection.</p> <p>Use the higher rate (up to 300 mL/ha) in higher yielding crops where conditions favour disease development or susceptible varieties are grown.</p>
		Stem rust ( <i>Puccinia graminis tritici</i> )		<p>Continue to monitor crops after application, reapplication may be required if conditions favour disease development and initial application is made before the flag leaf has emerged.</p>
		Leaf rust ( <i>Puccinia recondita f.sp. tritici</i> , <i>Puccinia triticina</i> )		<p>Apply as a preventative spray at the first sign of flowering.</p> <p>Spray equipment must be set up to achieve good coverage of wheat heads.</p>
		Fusarium head blight/ head scab ( <i>Fusarium graminearum</i> )		<p>Use the higher rate (up to 300 mL/ha) in higher yielding crops where conditions favour disease development or susceptible varieties are grown.</p>

CROP	STATE	DISEASE	RATE	CRITICAL COMMENTS
Wheat – <i>continued</i>	All States	Yellow leaf spot ( <i>Pyrenophora tritici-repentis</i> )	150 to 300 mL/ha	<p>Monitor crops from late tillering and spray before disease has infected any of the top three leaves of the crop. Aim to protect the three top leaves of the plant from disease.</p>
		Septoria nodorum-glume blotch ( <i>Phaeosphaeria nodorum</i> )		<p>Monitor crops from late tillering.</p> <p>Aim to protect the three top leaves of the plant from disease.</p> <p>Where lower rates are used apply with a suitable adjuvant (refer to Use of Adjuvant).</p>
		Powdery mildew ( <i>Blumeria graminis f.sp. tritici</i> )		<p>Monitor crops from mid tillering.</p> <p>Apply at the first sign of disease development. Monitor and reapply within 14 to 21 days if conditions favour disease development.</p> <p>Use the higher rates (up to 300 mL/ha) where conditions favour severe disease, or disease is established in the lower canopy.</p> <p>Where lower rates are used apply with a suitable adjuvant (refer to Use of Adjuvant).</p>
Triticale	All States	Stripe rust ( <i>Puccinia striiformis</i> )	150 to 300 mL/ha + adjuvant	<p>Monitor crops from early stem elongation, and on susceptible varieties apply at the first sign of infection.</p> <p>Use the higher rate (up to 300 mL/ha) in higher yielding crops where conditions favour disease development or susceptible varieties are grown.</p> <p>Continue to monitor crops after application. Re-application may be required if conditions favour disease development and initial application is made before the flag leaf has emerged.</p>

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

## WITHHOLDING PERIODS

### Canola and Mustard:

**Harvest - NOT REQUIRED WHEN USED AS DIRECTED**

**Grazing: - DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 14 DAYS AFTER APPLICATION.**

### Cereals:

**Harvest - DO NOT HARVEST FOR 5 WEEKS AFTER APPLICATION.**

**Grazing: - DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 14 DAYS AFTER APPLICATION.**

## EXPORT OF TREATED PRODUCE

Growers should note that MRLs or import tolerances do not exist in all markets for produce treated with Quantum ProTeb 420 EC Fungicide. If you are growing produce for export, please check with Quantum Agrosiences Holdings Pty Ltd for the latest information on MRLs and import tolerances before using Quantum ProTeb 420 EC Fungicide.

## GENERAL INSTRUCTIONS

### Foliar diseases on cereal crops

Monitor the crop regularly for symptoms of disease. Generally spray at the first sign of disease, although this will depend on factors such as expected weather conditions and the particular crop variety resistance. Refer to Directions for Use for particular disease recommendations. Up to two sprays of Quantum ProTeb 420 EC Fungicide may be applied per season to the crop. Ensure good coverage of all susceptible plant parts.

### Disease control in oats

**Caution:** Application of tebuconazole (present in Quantum ProTeb 420 EC Fungicide) to some varieties of oats may result in early senescing and bronzing of leaves.

Varieties most at risk may also exhibit this trait under various stress conditions not related to fungicide sprays. Mitika variety of oats has been identified as being susceptible to this condition when tebuconazole is applied, although other varieties may also be susceptible.

The potential disease control to be achieved by using Quantum ProTeb 420 EC Fungicide in Mitika oats should be weighed against the risk of crop damage.

For further information on oat tolerance contact Quantum Agrosiences Holdings Pty Ltd.

### Disease control in canola and mustard

#### Blackleg

Higher blackleg risk can be expected in higher rainfall districts (above 500 mm annual rainfall), where crops are grown within 500 m of a previous year's stubble and in later sown crops (May to August). Other factors will also increase the risk of blackleg infection, including the intensity of canola and mustard cropping in a district, rainfall before sowing and the frequency of growing the same canola and mustard cultivar. Consult industry guidelines for more detailed assessment of blackleg risk in specific situations. Up to two sprays of Quantum ProTeb 420 EC Fungicide may be applied per season to the crop.

## Sclerotinia

Quantum ProTeb 420 EC Fungicide is most effective when application is made prior to conditions conducive to sclerotinia infection. Infection and disease development are most conducive in warmer winter or spring conditions with extended periods of leaf wetness due to rainfall, dew and high humidity. Sclerotinia is most likely to develop where day temperatures are warmer coinciding with a saturated soil profile and rainfall events. Refer also to industry guidelines for advice on conditions under which sclerotinia are most likely to develop.

Control of sclerotinia stem rot is more effective in crops which have a uniform flowering. Uneven flowering (e.g. caused by staggered germinations) makes optimum spray timing difficult and two sprays may be required in these crops.

Generally a single application of Quantum ProTeb 420 EC Fungicide at 20 to 30% flowering will control sclerotinia in crops with a short flowering interval. Crops with an extended flowering period may require a second application prior to 50% flowering (full-bloom) to adequately control sclerotinia if conditions late in the season are conducive to development of disease.

Length of protection may be reduced in bulky crops where coverage is difficult and where there is growth dilution of the fungicide. For optimum protection, application should be directed to obtain coverage on petals, leaves and stems.

## MIXING

Prior to pouring, shake container vigorously, then add the required quantity of Quantum ProTeb 420 EC Fungicide to water in the spray vat with agitators in motion. Add the required amount of adjuvant if necessary and mix thoroughly.

## APPLICATION

### Ground:

**Wheat, barley, oats and triticale:** Apply product using a spray volume of 70 - 100 L/ha and a MEDIUM spray quality.

**Canola and Mustard:** Apply product using a spray volume of 60 - 100 L/ha and a MEDIUM spray quality.

**Aerial:** Apply product using a minimum spray volume of 20 L/ha and a MEDIUM spray quality.

## COMPATIBILITY

For information on compatibility please contact Quantum Agrosiences Holdings Pty Ltd.

## USE OF ADJUVANT

Depending on the disease that is to be treated in the crop, some benefit in efficacy may be gained from addition of an appropriate adjuvant to the spray mixture.

Follow these guides when deciding on the addition of an adjuvant to the tank mixture prior to spraying.

Disease	Addition of adjuvant	
	Quantum ProTeb 420 EC Fungicide 150 mL/ha	Quantum ProTeb 420 EC Fungicide 300 mL/ha
<b>Barley</b>		
Net form net blotch	Yes	Not required
Spot form net blotch	Yes	Not required
Powdery mildew	Not required	Not required
Leaf scald	Yes	Not required
Leaf rust	Yes	Not required
<b>Oats</b>		
Stem rust	N/A	Yes (BS 1000 only)
Leaf rust	N/A	Yes (BS 1000 only)
Septoria blotch	Yes	Not required
<b>Wheat</b>		
Stripe rust	Yes	Yes (BS 1000 only)
Stem rust	Yes	Yes (BS 1000 only)
Leaf rust	Yes	Yes (BS 1000 only)
Yellow leaf spot	Not required	Not required
Septorja nodorum - glume blotch	Yes	Not required
Powdery mildew	Yes	Not required
Fusarium head blight/head scab	Yes	Yes (BS 1000 only)
<b>Triticale</b>		
Stripe rust	Yes	Yes (BS 1000 only)
<b>Canola and Mustard</b>		
Blackleg and sclerotinia stem rot	Not required	Not required
<b>Note:</b> Adjuvant is not required for use of Quantum ProTeb 420 EC Fungicide on canola and mustard.		

Suitable Adjuvants	Comments
BS 1000 0.25%	Can be used at all rates of Quantum ProTeb 420 EC Fungicide for ground and aerial application.
Hasten® 1% Rocket® 1% Kwickin® 1% D-C-Trate® Advance 1% D-C-Trate 1% Uptake® 0.5%	For use with Quantum ProTeb 420 EC Fungicide at 150 mL/ha only.  DO NOT use with Quantum ProTeb 420 EC Fungicide at rates above 150 mL/ha. DO NOT use for aerial application.

#### FUNGICIDE RESISTANCE WARNING

Quantum ProTeb 420 EC Fungicide is a member of the DMI group of fungicides. For fungicide resistance management the product is a Group 3 Fungicide. Some naturally occurring individual fungi resistant to Quantum ProTeb 420 EC Fungicide and other Group 3 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 Quantum ProTeb 420 EC Fungicide or other Group 3 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, Quantum Agrosiences Holdings Pty Ltd accepts no liability for any losses that may result from the failure of Quantum ProTeb 420 EC Fungicide to control resistant fungi.

**GROUP 3 FUNGICIDE**

#### CAUTION

**Re-Entry Period:** DO NOT enter treated areas until the spray has dried, unless wearing cotton overalls buttoned to the neck and wrist (or equivalent clothing) and chemical-resistant gloves. Clothing must be laundered after each day's use.

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

Very toxic to aquatic life. DO NOT contaminate streams, rivers, drains or waterways with the chemical or used containers.

#### Integrated pest management

Where IPM is practiced, Quantum ProTeb 420 EC Fungicide may have adverse effects on some non-target beneficial insects such as predatory mites.

#### STORAGE AND DISPOSAL

Store in the closed, original container in a cool, well-ventilated area. DO NOT store for prolonged periods in direct sunlight. Triple-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 deliver empty packaging to an approved waste management facility. If an approved waste management facility is not available, bury the empty packaging 500 mm below the surface in a disposal pit specifically marked and set up for this purpose, clear of waterways, desirable vegetation and tree roots, in compliance with relevant local, state or territory government regulations. DO NOT burn empty containers or product.

## SAFETY DIRECTIONS

May irritate eyes. Avoid contact with eyes. When opening the container, mixing and loading and preparing spray, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing), and elbow-length chemical resistant gloves. When using the prepared spray, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing). Wash hands after use. After each day's use wash gloves, and contaminated clothing.

## FIRST AID

If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 13 11 26. If swallowed, do NOT induce vomiting. If in eyes wash out immediately with water.

## SAFETY DATA SHEET

Additional information is listed in the Safety Data Sheet (SDS) which can be obtained from the supplier.

**CONDITIONS OF SALE:** Quantum Agrosiences Holdings Pty Ltd shall not be liable for any loss injury damage or death whether consequential or otherwise whatsoever or howsoever arising whether through negligence or otherwise in connection with the sale supply use or application of this product. The supply of this product is on the express condition that the purchaser does not rely on Quantum Agrosiences Holdings Pty Ltd's skill or judgement in purchasing or using the same and every person dealing with this product does so at his own risk absolutely. No representative of Quantum Agrosiences Holdings Pty Ltd has any authority to add to or alter these conditions.

Additional information required under the Globally Harmonised System (GHS) classification of the substance/mixture: **Harmful if swallowed. May damage fertility. Suspected of damaging the unborn child. Very toxic to aquatic life with long lasting effects.** Do not handle until all safety precautions have been read and understood. Wear protective gloves and protective clothing. Wash all exposed external body areas thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment.



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