



## DIRECTIONS FOR USE

### Restraints

DO NOT apply to damaged, shot or pinched seed.

DO NOT apply treated seed from aircraft.

CROP	DISEASE	APPLICATION RATE	CRITICAL COMMENTS
Wheat	Take-all (Suppression) ( <i>Gaeumannomyces graminis</i> )	<b>Undiluted</b> 4.5 L/ tonne of seed  <b>Diluted</b> 4.5 L plus up to 1.5 L of water/ tonne of seed	Ensure even coverage of seed. Apply with an applicator designed for liquid seed treatments. Calibrate application equipment for the flow rate of the grain. Quantum Pro may be diluted with water prior to application to improve coverage. If applying dilute, or in mixtures the maximum recommended application volume is 6 L per tonne of seed.
	Common bunt ( <i>Tilletia</i> spp.) Seed- and soil-borne flag smut ( <i>Urocystis agropyri</i> ) Loose smut ( <i>Ustilago tritici</i> ) Stripe rust* ( <i>Puccinia striiformis</i> f. sp. <i>tritici</i> ) Leaf rust** ( <i>Puccinia triticina</i> ) Septoria tritici blotch (Suppression) ( <i>Mycosphaerella graminicola</i> )	<b>Undiluted</b> 3.0 or 4.5 L/ tonne of seed  <b>Diluted</b> 3.0 L plus up to 3.0 L of water/ tonne of seed OR 4.5 L plus up to 1.5 L of water/ tonne of seed	*Stripe rust will be controlled for up to 6 weeks after sowing, with good suppression thereafter at the 4.5 L/tonne seed rate. Use of Quantum Pro at the 3.0 L/tonne seed rate will provide up to 5 weeks control after sowing and good suppression thereafter.  **Leaf rust will be controlled for up to 4 weeks after sowing, with good suppression thereafter at the 4.5 L/tonne seed rate. Use of Quantum Pro at the 3.0 L/tonne seed rate will provide up to 3 weeks control after sowing and good suppression thereafter.
Barley	Barley leaf scald* ( <i>Rhynchosporium secalis</i> ) Powdery mildew* ( <i>Blumeria graminis</i> f. sp. <i>hordei</i> ) Barley loose smut ( <i>Ustilago nuda</i> var. <i>hordei</i> ) Covered smut ( <i>Ustilago segetum</i> var. <i>hordei</i> )	<b>Undiluted</b> 3.0 L Quantum Pro + 1.0 L Proguard*/ tonne of seed  <b>Diluted</b> 3.0 L Quantum Pro + 1.0 L Proguard plus up to 2.0 L of water/tonne of seed	Ensure even coverage of seed. Apply with an applicator designed for liquid seed treatments. Calibrate application equipment for the flow rate of the grain. Quantum Pro may be diluted with water prior to application to improve coverage. If applying dilute, or in mixtures the maximum recommended application volume is 6 L per tonne of seed.  *Barley leaf scald is controlled for up to 6 weeks after sowing, with good suppression thereafter.  *Powdery mildew is controlled for up to 5 weeks after sowing, with good suppression thereafter.
	Blackleg (Suppression) ( <i>Leptosphaeria maculans</i> )	20 L/tonne of seed	Ensure even coverage of seed. Apply undiluted with an applicator designed for liquid seed treatments. Calibrate application equipment for the flow rate of the grain.

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

## WITHOLDING PERIODS

### Wheat and Barley

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

**DO NOT CUT FOR STOCKFOOD WITHIN 12 WEEKS OF SOWING**

**Grazing: DO NOT GRAZE WITHIN 6 WEEKS OF SOWING**

**Livestock producing milk for human consumption: DO NOT GRAZE WITHIN 12 WEEKS OF SOWING**

### Canola

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

**Grazing: DO NOT GRAZE PLANTS GROWN FROM TREATED SEED, OR CUT FOR STOCK FOOD WITHIN 8 WEEKS OF SOWING**

## LIVESTOCK DESTINED FOR EXPORT MARKETS

The grazing withholding periods apply to stock slaughtered for the domestic market. Some export markets apply different standards. To meet these standards, ensure that in addition to complying with the grazing withholding period, the Export Slaughter Interval (ESI) is observed before stock are sold or slaughtered.

## EXPORT SLAUGHTER INTERVAL (ESI) – 7 weeks

Livestock that have been grazing on crops grown from treated seed should be placed on clean feed for 7 weeks prior to export slaughter.

## PROTECTION STATEMENT

**DO NOT FEED TREATED SEED TO LIVESTOCK, INCLUDING POULTRY.**

## GENERAL INSTRUCTIONS

Quantum Pro is a novel quinazoline-based triazole fungicide for the protection of wheat against the root disease, take-all and protection of canola against blackleg.

When Quantum Pro is applied as a seed treatment to wheat, the development of take-all is suppressed. Suppression of take-all with Quantum Pro is characterised by reduced root lesions and a reduced number of whiteheads.

Quantum Pro also provides season long control of common bunt, seed- and soil-borne flag smut and loose smut in wheat. In addition Quantum Pro provides early season control of leaf rust, stripe rust and suppression of septoria tritici blotch in wheat. Suppression of septoria tritici blotch with Quantum Pro results in a reduction in the visible symptoms of this disease.

When applied to barley Quantum Pro provides early season control of powdery mildew and scald, with good suppression of both diseases for an extended period. In order to provide adequate control of loose smut and covered smut in barley, Quantum Pro must be applied in tank mixture with a full label rate of Proguard® Seed Treatment as indicated in the 'Application Rate' section of the Directions for Use Table.

When Quantum Pro is applied as a seed treatment to canola, the development of blackleg disease is suppressed. Suppression of blackleg with Quantum Pro is characterised by reduced leaf infection, reduced plant lodging and increased plant survival.

Quantum Pro is applied to wheat, barley and canola seed prior to sowing. The low water solubility of the active ingredient, fluquinconazole, allows extended uptake for long lasting protection of the plant, thus reducing the yield decline commonly associated with the above-mentioned root, grain and foliar diseases.

Quantum Pro contains a red pigment so that treated grain can be easily identified.

## Fungicide Resistance Warning

### GROUP 3 FUNGICIDE

Quantum Pro Seed Treatment is a member of the triazole group of fungicides. For fungicide resistance management Quantum Pro is a Group 3 fungicide.

Some naturally occurring individual fungi resistant to Quantum Pro 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 Pro and 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, Arysta LifeScience Australia Pty Ltd accepts no liability for any losses that may result from the failure of Quantum Pro to control resistant fungi.

## Application

Quantum Pro is applied to the seed prior to sowing. It may be applied alone or in mixture with certain other seed treatment products, depending on the crop being treated and the target diseases (see below). For treatment of wheat and barley seed Quantum Pro may also be diluted with water prior to application. Application must be conducted with a seed treatment machine suitable for flowable seed dressings, with an adjustable output. The equipment must be calibrated for the flow rate of the seed, to ensure even coverage and correct application rates.

For best results Quantum Pro should be used to treat only undamaged, cleaned seeds of high viability.

**Wheat:** Quantum Pro is a water based flowable product that can be applied neat or diluted with water. When applying the diluted product, prepare sufficient solution for the quantity of grain to be treated. Do not store diluted product. Do not dilute Quantum Pro with water such that greater than 6 L dilute product per tonne of seed is applied.

**Barley:** Quantum Pro must be mixed with Proguard prior to application. This mixture may be applied neat or diluted with water. Do not dilute the mixture of Quantum Pro and Proguard with more than 2.0 litres of water for each tonne of barley seed to be treated. Prepare sufficient solution only for the quantity of grain to be treated. Do not store diluted product.

**Canola:** Apply Quantum Pro neat to canola seed. Do not add water.

## Mixing Instructions

### Wheat and barley only

If mixing other compatible products or water with Quantum Pro, mix only sufficient product for immediate use. Add the required compatible product or water to Quantum Pro and agitate thoroughly by shaking, rolling or stirring. Do not allow mixed product to stand for more than five hours without further agitation.

## Compatibility

Quantum Pro Seed Treatment may be applied with Guardian® Seed Treatment Insecticide.

### Wheat only

Quantum Pro is compatible with Vincit® C, Vitaflo® C (up to 1.25 L/tonne) and Proguard® T seed treatments.

### Barley only

Quantum Pro is compatible with Proguard T and Proguard® Plus Seed Treatment.

Where additional protection against grain storage pests is required, Arysta LifeScience Australia recommends a mixture of Quantum Pro with K-Obiol® or another registered grain protection insecticide. Refer to the product label for application information.

## Crop Safety

### Canola

Quantum Pro may shorten the hypocotyl length of canola. To avoid possible negative effects, Arysta LifeScience Australia recommends following good canola sowing practices. Avoid sowing Quantum Pro treated canola deeper than 20 mm, or into soils prone to crusting. Ensure Quantum Pro treated seed is sown in the season of treatment.

## PRECAUTIONS

DO NOT use treated seed for human or animal consumption. DO NOT allow treated seed to contaminate grain or other seed intended for human or animal consumption.

## PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT

Treated seed could be harmful to game and wildlife.

DO NOT feed treated seed to wild or domestic birds. Any spillage of treated seed, however minor, must be cleaned up immediately, preferably recovered and used.

DO NOT contaminate streams, rivers or waterways with either this product, washings of this product, treated seed, or any container which has held product (see Storage and Disposal for directions).

## PROTECTION OF LIVESTOCK

**DO NOT FEED TREATED SEED TO LIVESTOCK, INCLUDING POULTRY.**

## STORAGE AND DISPOSAL

### Product and original container

Store in the closed, original container in a cool, well-ventilated area. Do not store for prolonged periods in direct sunlight. Do not store near foodstuffs or animal feed.

The method of disposal of the container depends on the container type. Read the 'Storage and Disposal' instructions on the label that is attached to the container.

### Application equipment

Rinse all application equipment with clean water immediately after use and dispose of rinsings in a dedicated disposal pit, specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots.

### Treated seed and containers of treated seed

Store treated seed in clearly marked bags or silos, away from other grain, animal feed or foodstuffs, in a cool, dry storage area. Do not use treated seed for human or animal consumption. If disposal of treated seed is necessary e.g. when cleaning up spillages, bury seed below 500 mm in a suitably located disposal pit, as described above. Do not use bags that have contained treated seed for any other purpose.

## SAFETY DIRECTIONS

Harmful if swallowed. May irritate the eyes. Avoid contact with the eyes. When preparing the mixture and using the prepared mixture, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing), elbow-length PVC gloves and goggles. Wash hands after use. After each day's use, wash gloves, goggles and contaminated clothing.

## FIRST AID

If poisoning occurs contact a doctor or Poisons Information Centre (telephone: 13 11 26).

## MATERIAL SAFETY DATA SHEET

Additional information is listed in the Material Safety Data Sheet, which can be obtained from Arysta LifeScience Australia Pty Ltd.

## 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, Arysta LifeScience Australia Pty Ltd accepts no liability or responsibility for loss or damage arising from failure to follow such directions and instructions.

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