

(Label main area front panel)



# PANTHA

## MAPP 18619

A suspension concentrate containing 250g/litre of Azoxystrobin, a broad spectrum fungicide for wheat, barley, oats, rye, triticale, combining peas, fresh peas (vining peas, garden pea, mange tout, sugar snaps), fresh beans (broad beans, green beans), field beans, lupins, bulb onions, garlic, shallots, leeks, carrots, asparagus, potatoes, oilseed rape, cabbage, cauliflower, Brussels sprouts, kale (winter greens), collard (spring greens), broccoli, calabrese, outdoor and protected crops of strawberry, outdoor and protected crops of lettuce, endive (including frisee, escarole), chicory (radicchio).

<b>IMPORTANT INFORM</b>				
<b>[ AGRICULTURAL/HORTIC ]</b>				
<b>Crops/situations</b>	<b>Maximum individual dose (litres product/hectare)</b>	<b>Maximum number of treatments</b>	<b>FUNGICIDE. Minimum spray Interval (days)</b>	<b>Latest time of application</b>
Wheat, rye and triticale	1	2	14	Before watery ripe stage (GS71)
Barley, oats	1	2	14	Before beginning of flowering (GS61)
Peas- combining	1	2	14	35 days before harvest
Fresh Peas (vining, garden pea, sugar snap, mange tout)	1	2	14	14 days before harvest
Broad beans	1	2	14	14 days before harvest
Fresh beans (green bean)	1	2	14	7 days before harvest
Field beans, Lupins	1	2	21	35 days before harvest
Bulb onions, garlic, shallots	1	3	7	14 days before harvest
Leeks	1	3	12	21 days before harvest
Carrots	1	3	7	14 days before harvest
Asparagus (outdoor)	1	2	10	Before senescence
**Brussels sprout, Cabbage, Cauliflower, Kale (winter greens), Collards (spring greens), Broccoli and Calabrese- all outdoor	1	2	12	14 days before harvest
Strawberries (outdoor and protected)	1	3	7	3 days before harvest
**Lettuce, Endive (including Frisee, Escarole), Chicory (radicchio), (outdoor and protected)	1	2	7	14 days before harvest
Potato (in-furrow)	3	1	-	At planting, applied as an in-furrow treatment
Potato (foliar spray)	0.5	3	7	7 days before harvest
Winter and Spring Oilseed Rape	1	2	21	21 days before harvest

**Other Specific Restrictions:**

To reduce the risk of resistance developing in target diseases the total number of applications of product containing Qol fungicides made to any cereal crop must not exceed two.

When used in a protected situation other than 'permanent protection will full enclosure', aquatic buffer zones in line with LERAP requirements must be observed.


\*\* A maximum total dose of 500g azoxystrobin must not be exceeded within a 12-month period on the same field.

**READ THE LABEL BEFORE USE. USING THIS PRODUCT IN A MANNER THAT IS INCONSISTENT WITH THE LABEL MAY BE AN OFFENCE. FOLLOW THE CODE OF PRACTICE FOR USING PLANT PROTECTION PRODUCTS.**

Net contents: **5 Litres** <sub>e</sub> (Packed 4 x 5 litre)

For Batch Number and Manufacturing Date see container.

PANTHA is a suspension concentrate containing 250g/litre of azoxystrobin



**Warning**  
Harmful if inhaled.  
Very Toxic to aquatic life with long lasting effects.  
Avoid breathing mist/spray.  
Use only outdoors or in a well-ventilated area.  
IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
Call a POISON CENTER/doctor if you feel unwell.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
Collect spillage.  
Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste.

**MAPP 18619**

**To avoid risks to human health and the environment comply with the instructions for use**

**AUTHORISATION HOLDER,**

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**IN CASE OF TOXIC OR TRANSPORT EMERGENCY**

**National Chemical Emergency Centre: Telephone 01865 407333.**

For the emergency information telephone National Poisons Information Service at one of the following numbers:

London 020 7635 9191

Belfast 01232 240503

Birmingham 0121 507 5588

Penarth 01222 709901

Edinburgh 0131 536 2300

Leeds 0113 243 0715

Newcastle 0191 232 5131

**This label is compliant with the CPA Voluntary Initiative Guidance**

## SAFETY PRECAUTIONS

### Operator protection

- ☐ WASH SPLASHES from skin or eyes immediately. ☐ DO NOT BREATHE SPRAY
- ☐ WASH HANDS AND EXPOSED SKIN before meals and after work.

### Environmental protection

- ☐ Avoid drift onto non-target plants.
- ☐ To protect aquatic life, for uses on crops broccoli, calabrese, Brussel Sprouts, Cabbage, Cauliflower, Collards, Lettuce and Kale, the maximum total dose applied must not exceed 500g Azoxystrobin per hectare per year.
- ☐ Do not contaminate water with the product or its container.
- ☐ Do not clean application equipment near surface water.
- ☐ Avoid contamination via drains from farmyards and roads.
- ☐ To protect aquatic organisms respect and unsprayed buffer zone to surface water bodies in line with LERAP requirements



DO NOT ALLOW DIRECT SPRAY from horizontal boom sprayers to fall within 5m of the top of the bank of a static or flowing waterbody, unless a Local Environmental Risk Assessment for Pesticides (LERAP) permits a narrower buffer zone, or within 1m of the top of a ditch which is dry at the time of application.

DO NOT ALLOW DIRECT SPRAY from hand held sprayers to fall within 1m of the top of the bank of a static or flowing waterbody. Aim spray away from water.

This product qualifies for inclusion within the Local Environmental Risk Assessment for Pesticides (LERAP) scheme. Before each spraying operation from a horizontal boom sprayer, either a LERAP must be carried out in accordance with CRD published guidance or the statutory buffer zone must be maintained. The results of the LERAP must be recorded and kept available for inspection for three years.

### Storage and disposal

- ☐ KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place.
- ☐ RINSE CONTAINER THOROUGHLY by using an integrated pressure rinsing device or manually rinsing three times. Add washings to sprayer at time of filling and dispose of safely.
- ☐ The (COSHH) Control of Substances Hazardous to Health Regulations may apply to the use of this product at work.

## DIRECTIONS FOR USE

**IMPORTANT: This information is approved as part of the product label. All instructions within this section must be read carefully in order to obtain safe and successful use of this product.**

PANTHA contains Azoxystrobin, a broad-spectrum fungicide from the strobilurin group. It has systemic, translaminar and protectant properties.

Azoxystrobin inhibits fungal respiration. It's mode of action is different from the action of other fungicidal groups. It should always be used in mixture with fungicides with other modes of action.

PANTHA shows good crop safety, disease control and maintenance of green leaf area which result in significant yield benefits.

PANTHA is best used as a protective treatment or during early stages of disease establishment. In cereals, the length of disease control is generally about four to six weeks during the period of active stem elongation but can be more when applied at flag leaf/ear emergence.

#### **RESTRICTIONS/WARNINGS**

- Certain apple varieties are highly sensitive to PANTHA. As a precaution, PANTHA should not be applied when there is a risk of spray drift onto neighbouring apple crops. Spray equipment used to apply PANTHA to other crops should not be used to treat apples.
- Apply PANTHA under good growing conditions with adequate soil moisture. Avoid poor growing conditions which may give less reliable results.

#### **DISEASES CONTROLLED Wheat**

Glume Blotch (*Leptosphaeria (syn. Septoria) nodorum*)

Yellow Rust (*Puccinia striiformis*)

Brown Rust (*Puccinia recondita*)

Ear Diseases (*Cladosporium, Alternaria*)

Can reduce the severity of Take-all (*Gaeumannomyces graminid var. Tritici*)

#### **Barley**

Net Blotch (*Pyrenophora teres*)

Brown Rust (*Puccinia hordei*)

Leaf Blotch (*Rhynchosporium secalis*)-reduction

Can reduce the severity of Take-all (*Gaeumannomyces graminid var. Tritici*)

#### **Oats**

Crown Rust (*Puccinia coronate*)

#### **Rye and Triticale**

Brown Rust (*Puccinia hordei*)

Leaf Blotch (*Rhynchosporium secalis*)-reduction

Can reduce the severity of Take-all (*Gaeumannomyces graminid var. Tritici*)

#### **Combining Peas, Vining Peas, Garden Peas, Sugar Snap, Mange Tout, Green Beans**

Downy mildew (*Perenospora viciae*)-reduction

Leaf and Pod Spot (*Ascochyta pisi*)- useful

When PANTHA is used to control leaf and pod spot, some control of Grey Mould (*Botrytis cinereal*) and Mycosphaerella blight may be achieved.

#### **Field Beans and Broad Beans**

Rust (*Uromyces fabae*)

#### **Lupins**

Rust (*Uromyces spp.*)

#### **Bulb onions, Shallots and Garlic**

Downy mildew (*Perenospora viciae*)-moderate

#### **Leeks**

Leaf Rust (*Puccinia porri*)

Purple Blotch (*Alternaria porri*)- moderate

White Tip (*Phytophthora porri*)- moderate

#### **Carrots**

Alternaria leaf blight (*Alternaria dauci*)

Powdery mildew (*Erysiphe polygoni*)

#### **Asparagus**

Stemphylium (*Stemphylium botryosum*) - Moderate Control

Rust (*Puccinia asparagi*)

#### **Brussels Sprouts, Cabbage, Cauliflower, Kale (Winter Greens), Collards (Spring Greens), Broccoli and Calabrese**

For moderate control of:

White blister (*Albugo candida*)

Ring Spot (*Mycosphaerella brassicicola*)

Alternaria (*Alternaria brassicae* and *Alternaria brassicicola*)

#### **Strawberry**

Powdery mildew (*Podosphaera macularis*)- Moderate control

Anthrachnose (*Colletotrichum acutatum*)- Reduction of activity

#### **Lettuce, Endive (Frisse and Escarole), Chicory (Raddichio)**

Downy mildew (*Bremia spp.*)

#### **Potatoes**

Stem canker and Black scurf (*Rhizoctonia solani*)- reduction in-furrow only

Black dot (*Colletotrichum coccodes*)- reduction in-furrow only

Early blight (*Alternaria solani*)- moderate control foliar use only

#### **Oilseed Rape**

Dark Leaf and Pod Spot (*Alternaria spp.*)

Sclerotinia stem rot (*S. sclerotiorum*)- moderate control

### **CROP SPECIFIC INFORMATION**

#### **WINTER & SPRING WHEAT, WINTER AND SPRING BARLEY, WINTER AND SPRING OATS, RYE & TRITICALE Timing**

Always inspect crops to assess disease development immediately before spraying. Best results will be achieved from applications made in the earliest stages of disease development or as a protectant treatment following a disease risk assessment or the use of appropriate decision support systems.

Winter and spring wheat, rye and triticale can be treated from BBCH 30-69.

Winter and Spring barley and winter and spring oats can be treated from BBCH 30-59.

For protection against ear disease (*Cladosporium* and *Alternaria*) apply PANTHA at ear emergence.

When used to control the listed foliar diseases, PANTHA applied at the first or second node stage of the crop can reduce the severity of Take-all infection.

#### **Rate of Use**

1.0 litre per hectare.

The maximum number of applications to any cereal crop is two per crop.

#### **Tank Mixing**

On cereal crops, PANTHA must always be used in mixture with another product, recommended for control of the same target disease that contains a fungicide from a different cross resistance group and is applied at a dose that will give robust control.

#### **Resistance Management**

Use PANTHA as part of an Integrates Crop Management (ICM) strategy incorporating other methods of control, including where appropriate other fungicides with a different mode of action. You must not apply more than two foliar application of QoI-containing products to any cereal crop.

Disease control may be reduced if strains of other pathogens less sensitive to azoxystrobin develop.

On cereal crops, PANTHA must always be used in mixture with another product, recommended for control of the same target disease that contains a fungicide from a different cross resistance group and is applied at a dose that will give robust control.

Users should refer to current FRAG-UK guidelines for Qol compounds.

#### **PEAS (COMBINING AND FRESH), GREEN BEANS, BROAD BEANS, LUPIN Timing**

PANTHA should always be used at the first sign of disease infection or when a predictive assessment shows conditions favourable for disease development from BBCH 17-72. For optimum disease control apply PANTHA before infection or as soon as disease is first seen in the crop. Always inspect crops to assess disease development immediately before spraying. Best results will be achieved from applications made in the earliest stage of disease development or as a protectant treatment following a disease risk assessment or the use of appropriate decision support systems.

#### **Rate of Use**

1.0 Litre per hectare.

A second treatment may be required if disease pressure remains high-especially in combining peas. A minimum interval of 14 days must be observed between applications.

#### **Peas for Processing**

Where a crop of peas is destined for processing, consult your processor before treating with PANTHA. (One year's results indicate that no tints were detected on quick frozen, canned, vining or canned combining peas).

#### **Crop Safety**

PANTHA shows good crop safety on combining peas and fresh peas. Before applying ensure the crop is free from any stress caused by environment or agronomic effects. Check wax level if necessary using the Crystal Violet test.

#### **Resistance Management**

To avoid the likelihood of resistance developing, application of PANTHA should be made with due regard to current FRAG-UK guidelines for Qol compounds. Do not make more than two applications of PANTHA.

#### **FIELD BEANS Timing**

Before applying PANTHA, ensure the crop is free from any stress caused by environmental or agronomic effects. Always inspect crops to assess disease development immediately before spraying. Best results will be achieved from applications made in the earliest stage of disease development from BBCH 60-69 or as a protectant treatment following a disease risk assessment or the use of appropriate decision support systems.

A second treatment may be required if disease pressure remains high. A minimum interval of 21 days must be observed between application.

#### **Rate of Use**

1.0 Litre per hectare.

#### **Resistance Management**

To avoid the likelihood of resistance developing, application of PANTHA should be made with due regard to current FRAG-UK guidelines for Qol compounds. Do not make more than two applications of PANTHA to crops of field beans. Use PANTHA as part of an Integrates Crop Management (ICM) strategy incorporating other methods of control, including where appropriate other fungicides with different modes of action.

#### **BULB ONIONS, SHALLOTS, GARLIC, LEEKS AND CARROTS Timing**

Before applying PANTHA, ensure the crop is free from any stress caused by environmental or agronomic effects. For optimum disease control PANTHA should be used at the first sign of disease infection or preferably preventatively when a predictive assessment shows conditions favourable for disease development. Always inspect crops to assess disease development immediately before spraying. Best results will be achieved from applications made in the earliest stage of disease development or as a protectant treatment following a disease risk assessment or the use of appropriate decision support systems.

Bulb onions, garlic and shallots can be treated from BBCH 14-48.

Leeks can be treated from BBCH 16-48.  
Carrots can be treated from BBCH 16-49.

**Rate of Use**

1.0 Litre per hectare.

**Bulb Onion**

For optimum downy mildew control in bulb onions, garlic and shallot a 7 to 10 day spray interval should be maintained.

Applications to established downy mildew infection are unlikely to give reliable control.

**Processing**

Where a crop is destined for processing, consult your processor before treating with PANTHA.

**Resistance Management**

Use PANTHA as part of an Integrated Crop Management (ICM) strategy incorporating other methods of control, including where appropriate other fungicides with a different mode of action.

To avoid the likelihood of resistance developing, applications of PANTHA should be made with due regard to current FRAC guidelines for Qol compounds as illustrated below in the following table:

Total number of fungicide spray applications per crop.	1	2	3	4	5	6	7	8	9	10	11	≥12
Maximum recommended solo Qol fungicide sprays.	1	1	2	2	2	2	2	3	3	3	3	4
Maximum recommended Qol fungicide sprays in mixture	1	2	2	2	2	3	3	4	4	4	4	4

No more than 3 applications of PANTHA are permitted per crop. Refer to the FRAC website for updates on recommendations for resistance management.

**ASPARAGUS (OUTDOOR) Timing**

Always inspect crops to assess disease development immediately before spraying. Best results will be achieved from applications made in the earliest stages of disease development or as a protectant treatment following a disease risk assessment or the use of appropriate decision support systems. Asparagus can be treated from BBCH 41-89.

Earliest time of application: After commercial cutting.

PANTHA may only be applied after harvest season (i.e. after commercial cutting). Where a new ‘bed’ is established, do not treat within three weeks of transplanting out the crowns.

A minimum interval of 10 days must be observed between applications.

Latest time of application: until the end of September or before the crop senescence, whichever is sooner.

PANTHA shows good crop safety on asparagus. Before applying ensure the crop is free from any stress cause by environmental or agronomic effects.

**Rate of Use**

1.0 Litre per hectare.

**Resistance Management**

PANTHA contains azoxystrobin a member of the Qol cross resistance group. PANTHA should be used preventatively and should not be relied on for its curative potential. Disease control may be reduced if strains of pathogens less sensitive to azoxystrobin develop.

To avoid the likelihood of resistance developing, application of PANTHA should be made with due regard to current FRAC guidelines for Qol compounds as illustrated below in the following table:

Total number of fungicide spray applications per crop.	1	2	3	4	5	6	7	≥8
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Maximum recommended solo Qol fungicide sprays.	1	1	2	2	2	2	2	3
Maximum recommended Qol fungicide sprays in mixture	1	2	2	2	2	3	3	3

No more than 2 applications of PANTHA are permitted per crop. Refer to the FRAC website for updates on recommendations for resistance management.

## POTATOES

### FOLIAR APPLICATION

For the moderate control of early blight (*Alternaria solani*)

#### Timing

Before applying PANTHA, ensure the crop is free from any stress caused by environmental or agronomic effects. Always inspect crops to assess disease development immediately before spraying. Best results will be achieved from applications made in the earliest stages of disease development or as a protectant treatment following a disease risk assessment or the use of appropriate decision support systems.

Potatoes can be treated from BBCH 51-85.

A minimum interval of 7 days must be observed between applications.

#### Rate of Use

0.5 Litres per hectare

A total of 3 applications can be made per season if disease pressure remains high.

#### Potatoes for Processing

Where a crop is destined for processing, consult processors before treating with PANTHA.

#### Resistance Management

The risk of resistance developing to PANTHA in *Alternaria solani* is considered to be moderate. To avoid the likelihood of resistance developing, application of PANTHA should be made with due regard to the current FRAG-UK guidelines for Qol compounds. Use PANTHA as part of an Integrated Crop Management (ICM) strategy incorporating other methods of control, including where appropriate other fungicides with a different mode of action.

### IN-FURROW APPLICATION

#### Timing

PANTHA must be applied as an in-furrow application made at the time of planting for the reduction of Stem canker, Black scurf (*Rhizoctonia solni*) and Black dot (*Colletotrichum coccodes*).

Where PANTHA is applied as an in-furrow application, it is important to direct the spray into the planting furrow and not onto the seed tuber. Application should ensure that the PANTHA is applied to soil around the tuber.

#### Rate of Use

For in-furrow application made at planting: 3 Litre per hectare A maximum of one application per crop should be made.

#### Advisory Information

With in-furrow application, always target the soil and not the seed tuber in order to minimise any possible delay in emergence. Wherever possible, use properly chitted seed or cold-stored seed which has not started to sprout. Using seed which has just broken dormancy may well result in emergence delays.

Using PANTHA following earlier applications of imazalil, pencycuron, or imazalil/pencycuron is likely to lead to a check in the speed of crop emergence. Effects are usually, but not always, outgrown.

#### Effects of soil type

Do not use PANTHA on high organic matter soils as the product will not be effective.

#### Potatoes for Processing

Where a crop of potatoes is destined for processing, consult processors before treating with PANTHA.



### **Resistance Management**

The risk of resistance developing to PANTHA in *Rhizoctonia solani* (Black scurf and Stem canker) and *Colletotrichum coccodes* (Black dot) is considered to be very low. PANTHA should only be used in potato crops, which adhere to good rotation practices.

To avoid the likelihood of resistance developing, application of PANTHA should be made with due regard to the current FRAG-UK guidelines for QoI compounds. Use PANTHA as part of an Integrated Crop Management (ICM) strategy incorporating other methods of control, including where appropriate other fungicides with a different mode of action.

### **WINTER AND SPRING OILSEED RAPE Timing**

Before applying PANTHA, ensure the crop is free from any stress caused by environmental or agronomic effects. Always inspect crops to assess disease development immediately before spraying. Best results will be achieved from applications made in the earliest stages of disease development or as a protectant treatment following a disease risk assessment or the use of appropriate decision support systems.

Oilseed rape can be treated from BBCH 60-69

A second treatment may be required if disease pressure remains high.

*Sclerotinia*- PANTHA should be applied as a protectant spray during flowering. The optimum timing is early flowering to mid flowering (GS60-GS65).

*Alternaria*- Apply PANTHA as a protective spray at early pod formation when the first ten pods are longer than 4cm, before they become knobbly and not later than the time the first spots are seen on the pods.

Note: an application of PANTHA against *Sclerotinia* will significantly limit the development of *Alternaria*.

### **Rate of Use**

1.0 Litre per hectare

### **Resistance Management**

To avoid the likelihood of resistance developing, application of PANTHA should be made with due regard to the current FRAG-UK guidelines for QoI compounds. Do not make more than two applications of PANTHA to crops of oilseed rape. Use PANTHA as part of an Integrated Crop Management (ICM) strategy incorporating other methods of control, including where appropriate other fungicides with a different mode of action.

### **BRUSSELS SPROUTS, CABBAGE, CAULIFLOWER, KALE (WINTER GREENS), COLLARDS (SPRING GREENS), BROCCOLI AND CALABRESE.**

#### **Timing**

Before applying PANTHA, ensure the crop is free from any stress caused by environmental or agronomic effects. Always inspect crops to assess disease development immediately before spraying. Best results will be achieved from applications made in the earliest stages of disease development or as a protectant treatment following a disease risk assessment or the use of appropriate decision support systems.

Brassicas can be treated from BBCH 16-49

A second treatment may be required if disease pressure remains high. A minimum interval of 12 days must be observed between applications to brassicae.

### **Rate of Use**

1.0 Litre per hectare

A maximum total dose of 500g azoxystrobin must not be exceeded within a 12-month period on the same field.

### **Resistance Management**

To avoid the likelihood of resistance developing, application of PANTHA should be made with due regard to the current FRAG-UK guidelines for QoI compounds. Do not apply more than a total of two applications of PANTHA to any brassica crop.

### **OUTDOOR AND PROTECTED LETTUCE, ENDIVE (INCLUDING FRISEE AND ESCAROLE), CHICORY (RADICCHIO) Timing**

Before applying PANTHA, ensure the crop is free from any stress caused by environmental or agronomic effects. Always inspect crops to assess disease development immediately before spraying. Best results will be achieved

from applications made in the earliest stages of disease development or as a protectant treatment following a disease risk assessment or the use of appropriate decision support systems.

Lettuce, Endive (including frisee and escarole), and chicory (radicchio) can be treated from BBCH 14-49.

A minimum interval of 7 days must be observed between applications for both protected and outdoor uses.

#### **Rate of Use**

1.0 Litre per hectare

A maximum total dose of 500g azoxystrobin must not be exceeded within a 12-month period on the same field.

#### **Resistance Management**

Use PANTHA as part of an Integrated Crop Management (ICM) strategy incorporating other methods of control, including where appropriate other fungicides with a different mode of action. To avoid the likelihood of resistance developing, application of PANTHA should be made with due regard to the current FRAG-UK guidelines for QoI compounds. Do not apply more than a total of two applications, when used as part of a programme.

#### **OUTDOOR AND PROTECTED STRAWBERRY Timing**

For optimum results apply PANTHA as a protectant spray at the beginning of flowering. Two further applications can be made if disease pressure remains high. Application should be made in sequence with other products as part of a fungicide programme during flowering at a minimum interval of 7 days.

Strawberries can be treated from BBCH 51-89.

A minimum interval of 7 days must be observed between applications to all strawberry crops.

#### **Rate of Use**

1.0 Litre per hectare

#### **Processing**

Where a crop is destined for processing, consult your processor before treating with PANTHA.

#### **Resistance Management**

Use PANTHA as part of an Integrated Crop Management (ICM) strategy incorporating other methods of control, including where appropriate other fungicides with a different mode of action.

To avoid the likelihood of resistance developing, application of PANTHA should be made with due regard to current FRAG guidelines for QoI compounds as illustrated below in the following table:

Total number of fungicide spray applications per crop.	1	2	3	4	5	6	7
Maximum recommended solo QoI fungicide sprays.	1	1	2	2	2	2	2
Maximum recommended QoI fungicide sprays in mixture	1	2	2	2	2	3	3

No more than 3 applications of PANTHA are permitted per crop.

#### **MIXING AND SPRAYING:**

Ensure that the sprayer is clean and correctly set to give an even application at the required volume. Half-fill the spray tank with clean water and start agitation. Shake the container and add the required amount of PANTHA to the sprayer using a filling device (e.g. induction bowl or closed transfer unit) or by direct addition to the sprayer tank.

Wash out containers thoroughly, preferably using an integrated pressure rinsing device, or manually rinse three times. Add washings to the sprayer at the time of filling. Complete filling to the required volume and continue to agitate throughout the spraying operation.

Do not leave the spray liquid in the sprayer for long period (such as during meal breaks or overnight).

## VOLUME OF WATER AND SPRAYING OUTDOOR CROPS

Apply using a medium quality spray (BCPC) at a pressure of at least 2 bar. Apply through conventional crop spraying equipment calibrated to give an even application at the correct volume.

Strawberries: Apply in at least 300 litres of water per hectare.

Brussels sprouts, cabbage cauliflower, kale (winter greens), collards (spring greens), broccoli, calabrese: Apply in at least 250 litre water per hectare.

Green beans, broad beans: Apply in at least 150 litres of water per hectare.

Lettuce and associated crops: Apply in at least 300 litres of water per hectare

Cereals, combining peas, fresh peas, field beans, lupins, oilseed rape, carrots, leek, bulb onions, garlic and shallots: Apply in at least 200 litres of water per hectare.

In dense crops, increase the water volume to improve coverage.

Asparagus: For conventional tractor mounted crop spraying equipment, apply in at least 600 litres of water per hectare using a medium quality sprayer (BCPC) at a pressure of at least 2 bar. For hand-held spraying equipment, apply in at least 200 litres of water per hectare.

### Potatoes

**In-furrow application use:** Apply between 50-150 litres of water per hectare. Apply using specialist in-furrow application equipment.

**Foliar application:** Apply in at least 200 litres of water per hectare.

## INDOOR CROPS

Application should be made via a hydraulic nozzle application e.g. motorise sprayer with hand or boon lance or via a knapsack sprayer.

Lettuce and associated crops: Apply in at least 300 litres of water per hectare.

Strawberry: Apply in at least 100 litres of water per hectare.

### AFTER SPRAYING

Thoroughly wash out sprayer according to manufacturer's guidelines and dispose of washing and clean containers according to DEFRA Code of Practice and local water authority guidelines.

## QUALIFIED USE RECOMMENDATIONS

The following uses are supported by a limited amount of effectiveness data which indicate that the use of PANTHA at 1.0 l/ha may provide some useful activity against Rust (*Uromyces* spp) on Lupins and Anthracnose (*Collectotrichum acutatum*) on strawberries.

### Resistance Management

PANTHA contains azoxystrobin a member of the QoI cross resistance group. PANTHA should be used preventatively and should not be relied on for its curative potential, Disease control may be reduced if strains of pathogens less sensitive to azoxystrobin develop.

Use PANTHA as part of an Integrated Crop Management (ICM) strategy incorporating other methods of control, including where appropriate other fungicides with a different mode of action.

To avoid the likelihood of resistance developing, application of PANTHA should be made with due regard to current FRAG guidelines for QoI compounds.

## CONDITIONS OF SUPPLY

All goods supplied by us are of high grade and we believe them to be suitable but as we cannot exercise control over their mixing and use, all conditions and warranties, statutory or otherwise, as to the quality of or fitness for any purpose of our goods are excluded and no responsibility will be accepted by us for any danger or injury whatsoever arising from their storage, handling, application or use.