



Carial® Star

syngenta®

Product Registration Number: MAPP 16323

CARIAL STAR is a suspension concentrate containing 250 g/l mandipropamid and 250 g/l difenoconazole.

For the control of Foliar blight (*Phytophthora infestans*) and moderate control of Early blight (*Alternaria solani*, *Alternaria alternata*) in potatoes.

The (COSHH) Control of Substances Hazardous to Health Regulations may apply to the use of this product at work.

Syngenta UK Ltd
CPC 4, Capital Park, Fulbourn, Cambridge, CB21 5XE
Tel: Cambridge (01223) 883400

In case of toxic or transport emergency ring +44 (1484) 538444 any time.

PROTECT FROM FROST
SHAKE WELL BEFORE USE
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This product label is compliant with the CPA Voluntary Initiative (VI) guidance.

SAFETY PRECAUTIONS

(a) Operator protection

WASH HANDS AND EXPOSED SKIN before eating, drinking and after work.
IF YOU FEEL UNWELL, seek medical advice (show label where possible).



(b) Environmental protection

To protect aquatic organisms, respect an unsprayed buffer zone distance to surface water bodies in line with LERAP requirements.

DO NOT ALLOW DIRECT SPRAY from horizontal boom sprayers



to fall within 5 m 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 1 m of the top of a ditch which is dry at the time of application. 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 or broadcast air assisted 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.

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.

RISK TO NON-TARGET INSECTS OR OTHER ARTHROPODS.
See Directions for Use.

(c) Storage and disposal

KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place
DO NOT RE-USE CONTAINER for any purpose
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.

5 litres

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**CARIAL STAR**

A suspension concentrate containing 250 g/l mandipropamid and 250 g/l difenoconazole.

Signal Word:

Warning

Hazard Statements:

May be harmful if swallowed.

Very Toxic to aquatic life with long lasting effects.

Precautionary statements:

Keep out of reach of children.

Do not eat, drink or smoke when using the product.

Avoid release to the environment.

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.

Supplemental information:

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

Contains 1,2-benzisothiazol-3-one. May produce an allergic reaction.

IMPORTANT INFORMATION

FOR USE ONLY AS AN AGRICULTURAL FUNGICIDE

For use on potatoes

| | |
|-------------------------------|--------------------------------|
| Maximum Individual Dose: | 0.6 litres product per hectare |
| Maximum Number of Treatments: | Three per crop |
| Latest Time of Application: | 3 days before harvest |

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

This leaflet is part of the approved Product Label.

DIRECTIONS FOR USE

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

Avoid spraying within 5m of the field boundary to reduce effects on non-target insects or other arthropods.

These buffer distances should be measured from the field boundary, which for the purposes of this labelling is defined as from the edge of non-cropped land (i.e. land taken permanently out of agricultural production, including the 1-2 m strips adjacent to hedgerows and watercourses established under the Single Payment Scheme). Cropped land includes managed buffer strips (e.g. grass strips, wild flower margins and conservation headlands), but since these are usually set up as havens for wildlife it is best practice to minimise spray drift onto them

CARIAL STAR can be used on all varieties of potatoes including seed potatoes.

PROPERTIES OF CARIAL STAR

CARIAL STAR is a foliar fungicide for the preventative moderate control of Early blight (*Alternaria solani*, *Alternaria alternata*) and control of Late blight (*Phytophthora infestans*) in potatoes and is highly active against spore germination. Uptake into the leaf tissue assures good translaminal activity and inhibits mycelial growth during the incubation period.

COMPANY ADVISORY INFORMATION

As part of our Product Stewardship policy, Syngenta UK Limited recommends the following precautions should also be observed:

Wear appropriate clothing – cotton overall and rubber gloves, when handling the concentrate.

Since the occurrence of resistance cannot be forecast, neither Syngenta UK Limited nor its distributors can accept responsibility for any loss or damage to crops caused by the failure of CARIAL STAR to control resistant strains.

DISEASE CONTROLLED

For the control of Foliar blight (*Phytophthora infestans*) and moderate control of Early blight (*Alternaria solani*, *Alternaria alternata*) in potatoes.

BACKGROUND TO POTATO BLIGHT CONTROL

Late blight (*Phytophthora infestans*) is potentially a devastating disease of potatoes. In commercial production, a season long **disease prevention** policy is essential. First of all ensure that other control methods are being satisfactorily applied:

1. Prevent re-growth on potato dumps.
2. Destroy all groundkeepers.
3. Plant disease free seed.
4. Use generous soil ridges to protect tubers.

Integrate this approach with a fungicide programme :

Early Crops

In first and second early potato crops, particularly those grown in the same locality as main crop potatoes, an adequate and full blight protection programme should be applied right up to harvesting or haulm desiccation. This will protect the early crop while helping to reduce disease risk to later crops.

Maincrops

Disease prevention programmes require regular and season long fungicide use to limit foliar blight development. However, as an effective fungicide programme will preserve leaf area there may be more risk of infecting tubers at harvest, particularly during “heavy” blight years. Completion of the control programme should therefore include a complete haulm desiccant. Lifting of the crop should not take place for at least 10 days after **COMPLETE KILL** of the haulm. Crops intended for storage should not be lifted while there is any green tissue **AT ALL** on the leaves or stem bases.

Blight Risk Assessment

The risk of disease is affected by **weather conditions** (during the crop life) and **crop location**:

Weather Conditions - Spread of disease occurs under warm, humid conditions. Preferably use a reliable decision support system to determine what frequency of fungicide treatment is appropriate and fungicide type required.

Note: Blight forecasting has often been based on the occurrence of “Smith periods”. A “Smith period” is a 48 hour period in which the minimum temperature is 10°C or more and the relative humidity exceeds 90% for at least 11 hours during the first 24 hours and for at least 11 hours again during the final 24 hours. However, any period of warm, humid weather increases blight risk.

Crop Location - Locations with the highest probability of blight problems are:

1. Areas of the country where extensive main crop or early production takes place e.g. East Anglia, the south west or the west.
2. Areas where climatic conditions that encourage disease development occur on a frequent basis e.g. The south west, the west and the Fens.

BACKGROUND INTO ALTERNARIA CONTROL

The difenoconazole component of CARIAL STAR provides moderate activity against *Alternaria* spp. that cause Early blight. Primary infection can come into crops early in the rapid canopy growth phase. CARIAL STAR provides early protection against this and reduces the risk of secondary infection and disease progression later on when conditions become more favourable.

TIMING

CARIAL STAR is a protectant fungicide and therefore the spray programme must start BEFORE blight enters the crop. Commence spraying at the first blight warning or when local weather conditions are favourable for the disease. *Alternaria* spray applications are best timed before visual symptoms are seen or at the very earliest signs of infection.

Intervals between applications of CARIAL STAR should be reduced as blight risk increases, so that **protection** of the crop can be maintained.

Applications of CARIAL STAR should be made at 7-10 day intervals depending on disease pressure. As disease pressure and the risk of late blight infection increase, the interval should be shortened.

Rates of Use

Apply CARIAL STAR at 0.6 litres product per hectare. Up to three applications may be made per crop.

Applications of CARIAL STAR can be made up to 3 days before harvest.

MIXING AND SPRAYING**Spray Volume**

Apply CARIAL STAR in 200-600 litres of water per hectare.

Spray Nozzles

A medium quality spray* is preferred for application of CARIAL STAR (* as defined by The British Crop Protection Council). A spray pressure of 2 - 3 bar is recommended.

Mixing

Make sure the sprayer is clean and set to give an even application at the correct volume.

Fill the spray tank with half the required volume of clean water and start agitation. Add the required amount of CARIAL STAR and continue agitation whilst adding the rest of the water.

Agitate the mixture thoroughly before use and continue agitation during spraying and any stoppages.

Thoroughly wash all spray equipment with water immediately after use.

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

PHYTOPHTERA RESISTANCE MANAGEMENT

CARIAL STAR contains a CAA fungicide (FRAC code no. 40). To minimise the risk of resistance development in the pathogen population the following guidelines for CAA fungicides (based on an average number of 12 fungicide applications/season for blight control) should be followed:-

1. Where possible, use formulated/tank mixtures or an alternating strategy using fungicides from different mode of action groups.
2. Where CAA fungicides are applied as a mixture (co-formulated or as a tank mix) up to six applications (or max. of 50% of the total number of applications) may be made per crop or season.
3. Alternatively, where CAA fungicides are applied alone (without a co-formulant or tank mix partner) a maximum of four applications (or 33% of the total number of applications) may be made per crop or season.
4. No more than 3 applications of any CAA fungicide should be made consecutively.
5. Further information on suitable tank mix products and resistance management strategies is available from FRAG and BPC websites.

ALTERNARIA RESISTANCE MANAGEMENT

CARIAL STAR contains a DMI fungicide (FRAC code no. 3). To minimise the risk of resistance development in the pathogen population to CARIAL STAR the following guidelines should be followed:-

1. Where possible use an alternating strategy using fungicides from different mode of action groups that must be active against the pathogen.

2. Further information on suitable tank mix products and resistance management strategies is available from FRAG and BPC websites.

This product is to be used only in accordance with the recommendations and instructions given on the label provided with this pack.

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