

# Fungicide Resistance: label advice and restrictions

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## Introduction

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Since 1996 when the Advisory Committee on Pesticides (ACP) approved standardised insecticide and acaricide resistance warnings, an increasing number of standard resistance phrases and restrictions on the use of active substances have been agreed for all pesticides. This guideline, along with the ones for insecticides ([Guideline 601](#)) and herbicides ([Guideline 602](#)) provide consolidated lists of current label advice and restrictions. These phrases and restrictions apply to both on and 'off-label' uses. For 'off-label' uses they appear as part of the approval notice and advisory information. This is in recognition of the need to ensure a consistent approach to resistance management across all potential uses. It is important to note that the restrictions also refer to potential future extensions of use.

Many fungicide products contain multiple active substances. These may obviate the need for some statements, normally those relating to the need for use of the product in mixture. If an approval holder considers that any of the label amendments shown are not appropriate then an application must be made via Approvals Secretariat branch with the necessary data or a reasoned case to justify the non inclusion of the statement on the label.

This guideline currently only addresses a limited number of uses. PSD are aware that that the UK Fungicides Resistance Action Group (FRAG-UK) have published guidance on a wide range of other uses. PSD would normally expect labels to reflect the most recent FRAG guidance. It is intended that future updates of this guideline will include guidance wording based on updated FRAG-UK guidance.

**Note:** This guideline replaces Efficacy guideline 603, Label Amendments to Fungicides Containing Phenylamides.

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## Label phrases and restrictions

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The following situations require restrictions on use and/or specific label phrases:

## **CAA fungicides**

### Label advice for products to control potato late blight that only contain CAA fungicides

[Name of product] contains a CAA fungicide. When used in mixture with a fungicide with a different mode of action up to 6 applications, making up no more than ½ the total number of sprays to control late blight may be made.

When used alone up to 4 applications, making up no more than 1/3<sup>rd</sup> of the total number of sprays to control late blight may be made.

No more than three consecutive applications of a CAA fungicide should be made.

### Label advice for products to control potato late blight that also contain fungicides effective against blight from a different mode of action group

[Name of product] contains a CAA and a [name of group] fungicide. Up to 6 applications, making up no more than ½ the total number of sprays to control late blight may be made.

No more than three consecutive applications of a CAA fungicide should be made.

## **DMI fungicides**

Label advice for products for use on wheat to control *Septoria tritici* (*Mycosphaerella graminicola*)

[Name of product] contains a DMI fungicide. Resistance to some DMI fungicides has been identified in *Septoria* leaf blotch (*Mycosphaerella graminicola*) which may seriously affect the performance of some products. For further advice on resistance management in DMIs contact your agronomist or specialist advisor, and visit the FRAG-UK website.

## **Phenylamide fungicides**

### Restrictions

- i) For foliar applications and seed treatments, phenylamides should only be used in pre-packed mixtures with an unrelated effective partner and used in a sound management programme.
- ii) Phenylamides should not be used as soil treatments against airborne diseases.

*Note; the only normally permitted exceptions to these are for off-labels when no viable alternative treatment options exist. In these cases the advice below will be incorporated into the approval notice.*

Label advice for products used to control potato late blight (*Phytophthora infestans*)

“Strains of the potato blight fungus resistant to phenylamide fungicides (metalaxyl, metalaxyl-M and benalaxyl) occur. FRAC (Fungicide Resistance Action Committee) have defined guidelines for the effective management of blight with these fungicides, which are incorporated in this label.

[Product name] should not be applied where blight is already established in the crop, i.e. do not use curatively.

No more than five applications of phenylamide-containing products should be applied to a crop.

The final application of [product name] should be before the end of active growth of the potato haulm or before the end of August whichever is the earlier (provided that the statutory conditions of use are met).

Maximum spray interval of 14 days.”

Label advice for products only containing phenylamides for use against downy mildews (all crops).

[Product name] contains a phenylamide fungicide.

[Product name] should be used on a preventive basis early in the season or during the period of active vegetative growth. It should not be used where curative or eradication action is required.

To reduce the development of resistant strains of [disease], [Product] should be used as part of resistance management strategy. Incorporating other control methods including fungicides with a different mode of action used in sequence or mixture

## **QoI fungicides**

### Restrictions

- i) No more than two applications of any QoI fungicide may be made to crops of wheat, barley, oats, rye or triticale.
- ii) Products may not claim control of wheat powdery mildew unless they contain a specific mildewicide at a sufficient dose to control mildew on its own.

Label advice for products for use on cereals

“[product name] contains [active substance] a member of the QoI cross resistance group. [Product name] should be used preventatively and should not be relied on for its curative potential.

Use [product name] 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. You must not apply more than two foliar applications of QoI containing products to any cereal crop.

There is a significant risk of widespread resistance occurring in *Septoria tritici* populations in the UK. Failure to follow resistance management action may result in reduced levels of disease control.”

Label advice for products for use on cereals that only contain QoI active substances

“On cereal crops *[product name]* 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.”

Label advice for products for the control of powdery mildew in barley

“strains of barley powdery mildew resistant to QoI’s are common in the UK”

Label advice for products to control potato late blight

‘*[Product name]* contains a QoI fungicide. To minimise the risk of resistance to QoIs developing in potato late blight, Sonata must be used in accordance with the following resistance management strategy. Fungicides containing a QoI should make up no more than half the total fungicides applications applied to a crop. Do not use more than 3 consecutive QoI containing sprays.