

Utilising plant protection products authorised under Extension for Authorisation for Minor Use (EAMU) in the production of bedding plants.

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Introduction

This briefing note details trials of alternative plant protection products for use in the production of bedding plants to manage *Botrytis*, powdery and downy mildew. Trials were carried out on: *Begonia*, *Calibrachoa*, *Cosmos*, *Dahlia*, *Fuchsia*, Geranium, *Nemesia*, Pansy, *Petunia* and *Verbena*.

The majority of plant protection products for use in the production of ornamental plants are authorised under EAMUs, rather than having on-label authorisations. Most 'new' actives available to the sector are also authorised under EAMUs. This work gives growers essential access to key actives for use in crop protection.



Background

Crop safety trials are not often carried out for products authorised as EAMUs; growers are recommended by suppliers to carry out their own crop safety trials which can be a barrier to uptake. In some cases, growers may continue to use existing products that they know to be crop safe instead. This can result in pressure on remaining authorised actives and can increase the risk of [fungicide resistance](#) developing, particularly where actives from a limited number of FRAC (Fungicide Resistance Action Committee) groups are regularly used. Given the limited range of conventional chemistry available to the sector there is a need to use remaining, effective products responsibly to minimise the risk of resistance developing in the long term.

New direction of crop protection

Crop protection is moving in a new direction with increasing emphasis on bioprotectants in Integrated Crop Management (ICM). Bioprotectants include microbials (bacteria, fungi, viruses), semiochemicals (substances emitted by plants/animals used for communication between or within species) and natural substances (from plants, animals, minerals).

SCEPTREplus

AHDB recognised the issues with the availability of crop protection in ornamentals and has funded both screening work to identify 'new' / alternative actives with potential for use in ornamentals, and has assessed the crop safety of several 'new' / alternative actives under [SCEPTREplus](#) and other efficacy work programmes. The trials carried out under the Bedding and Pot Plant Centre were designed to expand on the SCEPTREplus programme by expanding the information on crop safety, culminating in a webinar summarising the [outcomes for ornamentals](#) (www.ac.uk).

Bedding and Pot Plant Centre crop safety trials

AHDB has funded three crop safety trials on bedding and pot plants under the Bedding and Pot Plant Centre: Management of conventional chemistry on bedding and pot plants ([Project PO 019d](#)). Five products were tested each year across a total of 10 different species. Over the three years five bioprotectants and seven conventional products with activity against three different target pathogens were assessed for crop safety. This demonstrates how these products can contribute to crop protection and building confidence in adopting and using new products.

Details of crop safety trials 2020 – 2022.

Year	Products tested for crop safety	Test species used	Target pathogen	Link to trials report
2020	Frupica SC, Karma, Reflect, Sercadis and Topas	<i>Cosmos, Dahlia, Pansy, Petunia and Verbena</i>	Powdery mildew	2020 trial report
2021	Frupica SC, Karma, Sercadis, Sonata and Luna Privilege	<i>Begonia, Nemesis, Geranium, Fuchsia and Calibrachoa</i>	<i>Botrytis</i>	2021 trial report
2022	Switch, Amylo X, Fytosave, Romeo, Serenade ASO	<i>Cosmos, Dahlia, Pansy, Petunia and Verbena</i>	Powdery and downy mildew	2022 trial report

Results from trials

All the fungicides and bioprotectants (twelve products) tested in this programme of work have proven to be crop safe on the ten species that they were tested on. Whilst it is acknowledged that a limited number of species / cultivars have been tested, this programme of work expands options to utilise a wider range of plant protection products in ICM programmes. Fungicides with four different FRAC codes (3,7,9, 9+12) and bioprotectants with two different FRAC codes* (BM 02 & P 06) were identified that proved safe to use on selected bedding and pot plant crops. Photos of crop safety are available within the reports; links to reports are included in the above table.

*Note that Fytosave is an elicitor (stimulates plant defences) and is unclassified by FRAC, so does not have a FRAC code.

Water volumes

Growers must calibrate sprayers regularly to be aware of the water volume being applied per hectare by different spray operators. The water volume influences the concentration of the plant protection product being applied; the concentration applied may influence crop safety. Some EAMUs state a minimum water volume, however many do not. It is widely acknowledged that a lower water volume confers many benefits (increased retention on the crop, reduced run off and lower application costs). The water volumes used in our trials are stated within the trial reports; if a lower water volume is used than in these trials it would be wise to check crop safety at the increased concentration (even where species and product combinations have previously proved safe) prior to widespread use.