T34 Biocontrol®

Biofungicide

T34 BIOCONTROL® is a biofungicide for the reduction of *Fusarium oxysporum f.sp. dianthi* on carnations (*Dianthus species*).

The active ingredient is the beneficial fungus *Trichoderma asperellum* strain T34.

fargro®
Ask the Specialists!

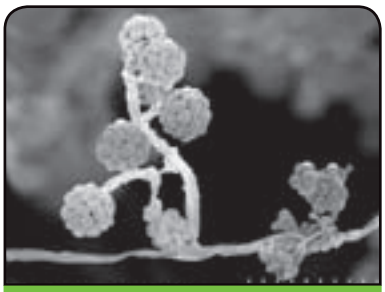
Biofungicide

T34 BIOCONTROL® is the first CRD approved *Trichoderma* product to arrive in the UK. It is a broad-spectrum, highly efficient biofungicide that shows great potential for a wide variety of applications.

T34 contains the naturally occurring, non-genetically modified beneficial fungus *Trichoderma asperellum* T34, which was discovered and developed by leading scientists at the University of Barcelona.

Selected from many hundreds of known *Trichoderma* strains, T34 demonstrated efficacy and aggressiveness far in excess of other strains tested.

T34 BIOCONTROL®, preventatively applied, protects carnation plants from *Fusarium* wilt due to its capacity to colonise the growing media and the plant root zone.



Scanning electron micrograph of T34 conidia

T34 BIOCONTROL® has on-label approval for the control of *Fusarium oxysporum* on *Dianthus* species under protection. *Fusarium* is a major root disease which causes crop loss in many plant species. T34 gives excellent control of *Fusarium*, but as a broad spectrum product T34 does rather more than just that. Dozens of trials have demonstrated that T34 has activity against a wide variety of plant diseases such as *Rhizoctonia, Sclerotinia, Pythium, Phytophthora, Didymella* (*Mycosphaerella*) and even *Botrytis*. Likewise research has been carried out showing that T34 works very well in other crop situations across the ornamental sector and even into edibles such as salad and fruit production. Although these other uses are not on-label currently, plans are already in place to apply for Extensions of Authorisation (formerly SOLAs) to allow more growers to use this pioneering new product.

How does it work?

T34 BIOCONTROL® has multiple modes of action (see below), a highly desirable feature of biopesticides. Because of this, T34 does not suffer from the same threat of resistance that many conventional chemicals do. What's more having multiple modes of action gives T34 great flexibility, making it more efficient in a great variety of situations and against a wide spectrum of different targets.

mycelia attachment to leaf hair

Modes of Action

Hyperparasitism

T34 actively attacks fungal pathogens, growing around them and killing them.

Competition

T34 actively outcompetes fungal pathogens for nutrients and space.

Synthesis of biostatic and antibiotic compounds

T34 produces natural chemicals which are highly effective at killing disease causing pathogens.

Priming

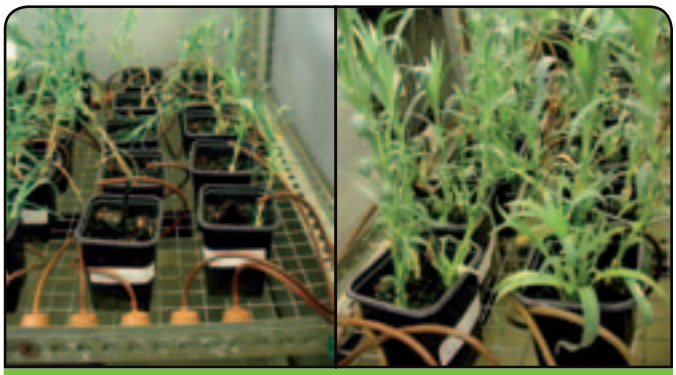
T34 activates the natural defence mechanisms of plants making them more resistant to pathogen attack.

Root colonisation

T34 grows around the plants roots forming a valuable protective barrier against disease. T34 also moves with the roots as they grow ensuring prolonged and reliable protection

How is it used?

T34 BIOCONTROL® is formulated as a wettable powder containing 1 x 10^{12} colony forming units (cfu) per kg of dry weight. Application methods are very flexible as T34 can be mixed in composts, sprayed after sowing or taking cuttings or used in a dip solution prior to planting. In addition T34 may be applied as a drench in soil grown crops, and is ideal for use in drip irrigation systems. As it is necessary to maintain the number of colony forming units in the media over time T34 should be applied as part of a regular programme.



T34 BIOCONTROL® reduced wilt disease and death in susceptible carnation cultivars caused by *F. oxysporum* by up to 91%. T34 BIOCONTROL® was applied to the peat substrate and plant roots.

Preparation and Rate of T34 BIOCONTROL®

T34 BIOCONTROL® may be applied by spraying, through an irrigation system or by root dipping. Application equipment should be thoroughly cleaned before use so that no traces of previous pesticides remain. Dissolve the specific amount of **T34 BIOCONTROL®** in a small amount of water and shake to obtain good dispersion. Add this solution to the spray or irrigation tank, with the total volume of water necessary, stirring continuously to ensure a homogeneous application of the product.

When T34 is applied through the irrigation system, apply it in the penultimate irrigation of the day, to ensure that no other residual product remains in the irrigation system. This will also minimise the wash-out risk and help to achieve suitable diffusion in the substrate.

Application equipment should be thoroughly cleaned after use.

1

Spraying of the growing media for propagation:

Apply the product by spraying at a dose of 10 grams of **T34 BIOCONTROL®** per m^3 of substrate before potting or at a dose of 0.5 grams per m^2 of surface area immediatley after sowing seeds or rooting cuttings.

2

Root dip:

Before planting, we recommend dipping the roots of the cutting for several hours or overnight in a solution of water with 0.01 grams of **T34 BIOCONTROL®** in 1 L of water.

3

Irrigation of container-grown crops:

Apply the product by irrigation at 5 grams of **T34 BIOCONTROL®** per 1000 pots of 1 L at the planting day.

Repeat the application one week later if plants were not treated during propagation with **T34 BIOCONTROL®**.

Apply 5 grams of **T34 BIOCONTROL®** per 1000 pots of 1 L every 2-3 months as follow-up treatment and also prior to a risk situation or after plants are stressed.

The maximum in-use concentration of **T34 BIOCONTROL®** must not exceed 10g/L water.

T34 Biocontrol® Biofungicide

Commercial greenhouse infected with *Fusarium oxysporum* f.sp. *dianthi*

Commercial greenhouse treated with **T34 BIOCONTROL®**

Compatibility

T34 BIOCONTROL® should not be applied in mixture with other pesticides or liquid fertilisers. The effect of other pesticides applied either before or after **T34 BIOCONTROL®** on the effectiveness of **T34 BIOCONTROL®** has not been fully established. Some pesticides, particularly fungicides, may reduce effectiveness of **T34 BIOCONTROL®**.

Restrictions

Effectiveness of **T34 BIOCONTROL®** has been demonstrated in a range of compost types including peat and coir but it is advisable to test the product with more unusual types of compost before using the product on a large scale, or before using with a different type of compost for the first time.

Safety of **T34 BIOCONTROL®** has been demonstrated on a limited number of carnation varieties (*Dianthus* species). Although damage to other varieties is unlikely to occur in normal use, it is advisable to test the product on a small number of plants before treating large numbers of plants of a new variety for the first time.

T34 BIOCONTROL® represents a major step forward in biofungicide technology. It offers growers flexibility, reliability and performance, without the headaches of harvest intervals, chemical residues or the threat of resistance.

T34 BIOCONTROL® – Key Advantages

- ✓ **Fully registered product with proven efficacy**
- ✓ **Broad spectrum disease control**
- ✓ **No harvest interval**
- ✓ **No chemical residue**
- ✓ **An effective resistance management tool**
- ✓ **Flexible application options**

T34 BIOCONTROL is available in 100g and 500g packs.

MAPP No: 15603

Biocontrol® Technologies

Approval Holder

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European Patent EP 1 400 586 B1
USA Patent US 7 553 657 B2

Use plant protection products safely.

Always read the label and product information before use.