

EFFICACY of BIOPESTICIDES

Frequently Asked Questions



EFFICACY of BIOPESTICIDES

Q: How do I distinguish between death of a pest due to chemicals in the spray programme and death due to biopesticide sprays with EPFs?

A: There is not always a fungal growth from EPFs on the outside of the dead pest, following infection and death of the pest due to a biopesticide spray. It is possible to incubate dead pests on artificial media in the laboratory to extract the EPF from the inside of the cadaver. A practical farm-level approach would be to compare efficacy of a chemical programme with a programme that includes biopesticides.

Q: If I tank mix a bio-fungicide with a fungicide or alternate them in a programme - how do I know if it was the fungicide or the bio-fungicide which controlled the disease?

A: It is possible with some diseases to grow the pathogen on artificial media and carry out a dual culture plate test to confirm the ability of the bio-fungicide to control the pathogen. A practical farm-level approach would be to compare efficacy of a chemical fungicide programme with a programme that includes bio-fungicides.

Q: Is there any difference between the many biopesticides made from the same organism but from different companies?

A: All commercial biopesticides are different - even if they have the same 'organism' (fungi or bacteria) as the 'active ingredient'. They may differ in the speed at which the beneficial fungus or bacteria may grow - a fast growing beneficial microbe competes with the pathogen more cost effectively. They will differ in the cost of the application per hectare. The lower the cost the more frequently they can be applied and therefore make it more cost effective to use in a prophylactic preventative programme. Ease of application, ordering, supply and technical support are also a factor to be taken into consideration.

Q: Are biopesticides as effective as chemical pesticides?

A: Some pests and diseases may be resistant to chemical pesticides - in which case the biopesticide could be more effective than the chemical. Biopesticides can be as effective as chemical pesticides if used in a prophylactic preventative programme and applied correctly. They are more specific than most chemicals in their targets and cannot compete with broad-spectrum chemicals.

However they do not harm natural enemies, whereas many chemical pesticides are extremely harmful to natural enemies. Therefore more natural enemies survive in a bio-intensive IPM programme and contribute to the protection of the crop.



REAL FACT

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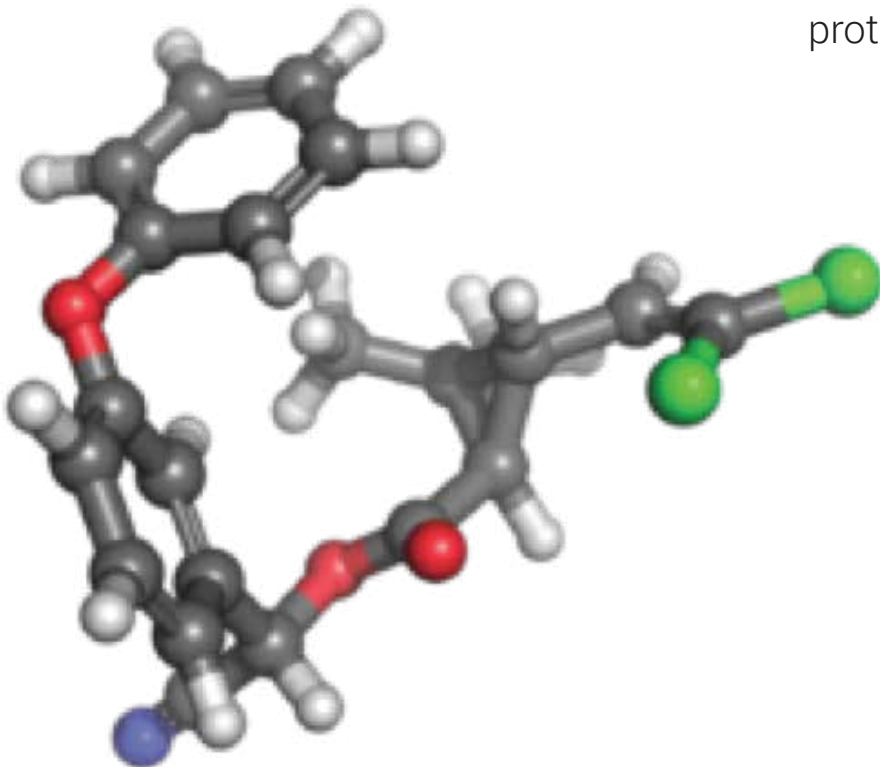
Real Trichoderma



Fusarium oxysporum
(5 days growth)

Equal quantities of a pathogenic Fusarium isolated from carnations were plated onto dual culture plate tests to compare efficacy of Real IPM Trichoderma with another commercial Trichoderma.

The natural growth rate of the Fusarium (pink fungus) is shown in the centre plate. On the right hand plate, Real Trichoderma has quickly grown over the Fusarium and prevented growth of the pathogen. The plate on the left is another commercial Trichoderma, which does not appear to grow as quickly as Real Trichoderma and would take longer to colonise and protect the roots of the crop



**IRAC Report
pesticide resistance
9,913 cases of
resistance,
570 species,
338 compounds.**

<http://www.irc-online.org/documents/resistance-database-team-update-2011/?ext=pdf>

Q: How can I improve the pest control by an EPF – when sprayed in canopy?

A: Precision spraying will contact the target pest and make the EPF effective.

Correct spray water volume and droplet size, as well as the direction of the spray and time of day a spray is applied will all increase the likelihood of the biopesticide spore landing on the target pest. Do not use large spray water volumes, which cause the biopesticide to ‘run-off’ the leaf.

Q: How can I improve the pest control by an EPF – when drenched in the soil?

A: The presence of organic matter in the soil will enhance efficacy because the EPF can also grow saprophytically on organic matter. In soils with low organic matter, the addition of molasses to the application will help to promote growth.

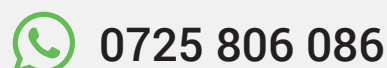
The larvae of many pests (thrips, fruit fly, leafminer, fungus gnats, bollworm, False Codling Moth caterpillar larvae) are usually only in the top few centimeters of the soil surface - so the soil drenches should be made by high volume spray applications to the soil surface or through orchard sprinklers. Fallen fruits, dead leaves and weeds should be removed from the soil surface before the application to increase contact and penetration of the biopesticides. Removing crop debris will also reduce crop disease inoculum.

If the EPF is applied through drip irrigation it is more likely to end up near the roots of the plant and not as close to the soil pests, which pupate near the soil surface. However if the larvae of pests feed on the roots (snout beetles, vine weevil, symphilids, etc.) then it is better to apply them through drip irrigation.

The months when pest larvae will be present in the soil is predictable Routine applications (monthly) to the soil should be made before the anticipated months when the pest larvae/ pupae are going to be in the soil.

Have you got some more questions?

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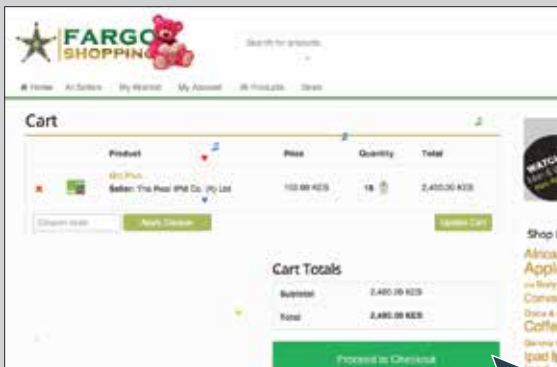
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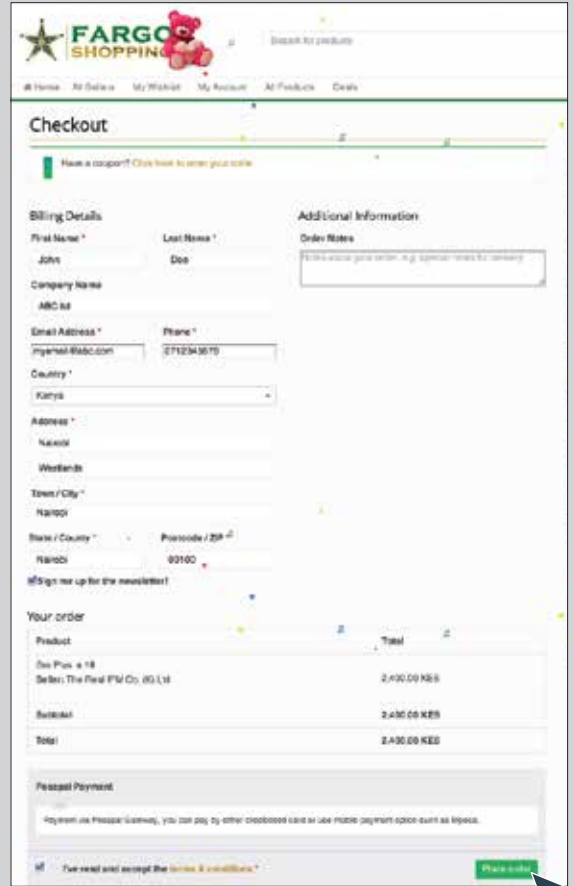
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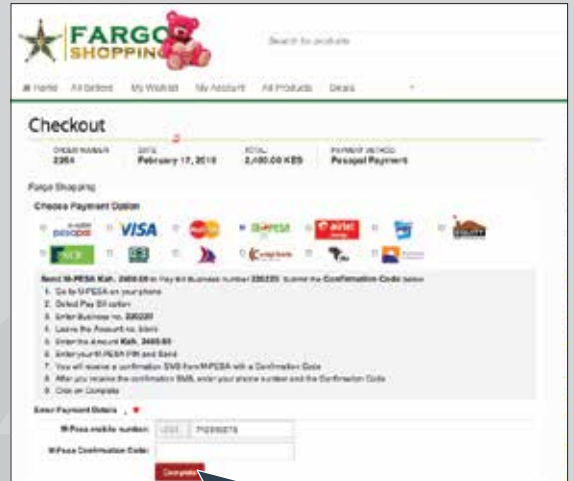
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Step 6



Choose your preferred mode of payment, follow the instructions and click on 'Complete'.

Upon confirmation of payment your order will be processed and delivered to your nearest Fargo Courier depot. You will be alerted via SMS once your order has been delivered to the depot.

TOTAL ORDER VALUES MUST BE ATLEAST 1000/- FOR FREE DELIVERY



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