Viribus-T

What is Viribus-T:

• Viribus-T is a micro encapsulated inoculant that contains four endophytic Trichoderma strains.
• Viribus-T offers producers an ecologically friendly option to obtain higher yields by means of sustainable soil management and root health.

Benefits of endophytic Trichoderma in Viribus-T:

• Viribus-T is suitable for a variety of crops such as row crops, vegetables and orchard crops.
• Endophytic Trichoderma fungi improve plant growth, reduce abiotic stress conditions as well as suppression of plant pathogens in the soil.
• Because endophytic Trichoderma fungi grow within the vascular tissues inside roots, they are less affected by other rhizosphere micro-organisms and are more protected against the adverse effects of fungicides.
• Endophytic Trichoderma fungi colonise the roots and have a positive interaction with the plant as they mobilise and make phosphates available to the plant in exchange for sugars.
• The effective interactions between plants and endophytic Trichoderma fungi also includes the secretion of plant growth hormones which hold many advantages for the plant.
• Endophytic Trichoderma fungi penetrate under the seed coat and therefore improves germination and seedling growth with strong root development (mobilise phosphates and growth hormones) which results in a uniform crop stand.
• The endophytic Trichoderma fungi in Viribus-T are very active and competitive against pathogens in the rhizosphere of the crop plant’s root system.
• The endophytic Trichoderma fungi form inhibiting growth zones at the roots and root hairs where adverse pathogens cannot grow and survive.
• Endophytic Trichoderma fungi increase the natural resistance / immune system of the plant as increased phenole and tannin levels are present in the plant if a plant would be attacked by a pathogen.
• The Trichoderma strains in Viribus-T have a high reproductive and survival capacity which causes them to remain present in the soil ecosystem after initial application.
• The Trichoderma also improve synergisms with other beneficial micro-organisms in the soil, such as Rhizobium species that fix nitrogen.
• The endophytic Trichoderma fungi’s filamentous growth within the vascular tissues, as well as in the rhizosphere, assist with abiotic stress relieve as improved uptake of water and minerals makes it easier available to the plant.

Where can Viribus-T be used:

• Viribus-T can be used in vegetable and orchard crops.

How to use Viribus-T:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Dosage rate</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seed treatment (vegetables)</td>
<td>30 g / 25 kg Seed.</td>
<td>• Apply as a dry seed treatment before planting.</td>
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<tr>
<td>In furrow (vegetables)</td>
<td>Dissolve 500 g / ha Viribus-T in 10 ℓ non-chlorinated water, add this suspension to the mixing tank.</td>
<td>• Minimum water application volume of 100 ℓ / ha is recommended.</td>
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<tr>
<td>Irrigation (vegetables)</td>
<td>1 g / tree – determine the number of trees beforehand and irrigate via drippers to the roots.</td>
<td>• Apply within a week after planting.</td>
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<tr>
<td>Irrigation (orchard crops)</td>
<td></td>
<td>• A calibrated injector pump is recommended for even distribution.</td>
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Relationship between Trichoderma and plants:

Bio-control organism
• Competes for nutrients
• Antibiotic secretions
• Myco-parasitism
• Change the pH of the rhizosphere

Interaction with plants
• Produce plant growth regulators
• Solubility of nutrients
• Stimulation through hormones
• Induction of defence reactions
• Promote resistance against abiotic stress

Advantageous effect on plants