

manufactured by



BioForce **MicroLife**

Microbial Amendment for Turf & Amenity Horticulture



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SPECIALTY PRODUCTS

Product Overview

BioForce MicroLife contains selected strains of beneficial fungi in *Trichoderma harzianum*, *Trichoderma hamatum*, *Trichoderma koningii* and *Rhizopogan* spp. in combination with four beneficial bacteria *Bacillus megaterium*, *Bacillus subtilis*, *Paenibacillus polymyxa* and *Pseudomonas fluorescens*.

When applied to turf or incorporated into other growing media, BioForce MicroLife will establish a strong beneficial microbial population that will colonise at the root zone to provide an improvement in the growing environment for plant roots.

More specifically, this enhanced microbial activity will stimulate root initiation and produce a more vigorous root system and promote better utilisation of applied nutrients. The biology will also assist in protecting against plant pathogens to give turf and amenity plants more resistance to adverse conditions and abiotic stresses.

BioForce MicroLife is a 3-part soil microbial inoculant composed of Part 1: BioBase, the microbial inoculant blend, Part 2: A liquid humic and fulvic acid material derived from American Leonardite to support microbial inoculation and growth and Part 3: A seaweed concentrate extracted from *Ecklonia maxima* to support root development and microbe interaction.

The benefit of having a 3 part solution, allows the product to maximise output of the 3 individual materials. This also improves storage and stability to ensure field performance.

Key Benefits of BioForce MicroLife

- > Formulated in Australia, ensuring good shelf life and stability.
- > Enhances root vigour, growth and health.
- > Concentrated forms of 3 *Trichoderma* species with the added benefits of 4 beneficial bacteria and 1 beneficial fungal species.
- > Contains *Trichoderma harzianum* – a well researched *Trichoderma* spp. in turfgrass.
- > Assists the plants immune system, produces antibiotic materials that stifle plant pathogen growth. It also competes against plant pathogens for space and nutrients.
- > Improves the overall plant growing environment.
- > Increases soil oxygenation.
- > Assists organic matter turnover.
- > Aids nutrient uptake and availability. Fixes free nitrogen from the atmosphere. Cycles Potassium and unlocks Phosphorus and trace elements.
- > Useful in an organic program approach in sensitive environmental situations.
- > Ideal for use in both turf and amenity plantings.
- > Safe for the environment, user and the public. No re-entry issues unlike traditional chemistry.

Concentrated form of Microbial Amendment

BioForce MicroLife is a concentrated form of biology for turf and ornamentals. It contains a minimum of 13.5 billion CFU's of collective beneficial fungi and bacteria. The beneficial microbes within the product are as follows:

| Microbe | Microbe Type |
|--------------------------------|--------------|
| <i>Trichoderma harzianum</i> | Fungi |
| <i>Trichoderma hamatum</i> | Fungi |
| <i>Trichoderma koningii</i> | Fungi |
| <i>Rhizopogan</i> spp | Fungi |
| <i>Paenibacillus polymyxa</i> | Bacteria |
| <i>Bacillus subtilis</i> | Bacteria |
| <i>Bacillus megaterium</i> | Bacteria |
| <i>Pseudomonas fluorescens</i> | Bacteria |

Formulated in Australia



Trichoderma harzianum

Antagonist against certain fungal species via competition. Increases germination.

Trichoderma hamatum

Increases root length, solubilises Phosphorus and assists in N fixation. Mycoparasitism of fungi.

Trichoderma koningii

Parasitises other fungi. Produces antibiotics which stifle growth of fungi. Decomposition of organic materials.

Rhizopogon spp.

Improves Potassium and Phosphorus uptake. Improves water availability. Assists colonisation of other fungi.

Microbe Function within



BioForce

MicroLife

Bacillus subtilis

Decomposes organic matter into available N. Assists in Nitrogen fixation and water uptake. Produces ant-fungal peptides & siderophores.

Pseudomonas fluorescens

Fungi suppression by antibiotics production. Sequesters Iron. P solubilisation. Increase population of other microbes.

Bacillus megaterium

Strong ability to decompose Phosphorus compounds in soil. Biosorption of heavy metals. Temperature stress resistance.

Paenibacillus polymyxa

Antagonist of fungal species. Indole acetic acid production. Enhances soil porosity.

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BioForce MicroLife – Application Details

| Application Method | Rate of Application | Mixing Instructions | Application Intervals |
|--|---|--|---|
| Apply through boom spray, fertigation, or overhead irrigation. Don't apply when conditions are extremely hot. Best applied in temperatures in the range of 5-25°C. | Mix 1L of Part 1: BioForce BioBase + 1L of Part 2: BioForce Microbe Support + 1L of Part 3: BioForce Plant Support per hectare. Each 6L carton of BioForce MicroLife will treat 2 hectares. | <ol style="list-style-type: none"> Half fill tank with required volume of water. Add the required amount of BioForce MicroLife. Fill the remainder of tank with water and maintain agitation. | To achieve best results BioForce MicroLife needs to be applied in a programmed approach. Ideally, applications should be undertaken at 4-8 weekly intervals, with key emphasis being placed on applications in autumn and spring. After application of fungicides the biology is sensitive to, re-application is recommended to restore concentrations. The biology can be UV sensitive, and as a result incorporation into the soil via irrigation following application is important. Application can be made any time of year as long as soil temperatures and moisture levels are adequate. |

BioForce MicroLife contains living fungi and bacteria and is sensitive to very high salt contents, chlorine based liquids and a number of fungicides including propiconazole, tebuconazole and carbendazim. BioForce MicroLife may be compatible with a range of herbicides and pesticides. It is important to note that physical compatibility does not guarantee product efficacy.

BioForce MicroLife – Product Compatibility Guide

| Compatibility | BioForce MicroLife | Code | Comments |
|------------------------|--------------------|---------------------|--|
| Fungicides | | | |
| Thiram | Compatible | C | Limited impact upon population. Do not tank mix with BioForce MicroLife. |
| Captan | Incompatible | NC | Allow 7 days before re-treatment with BioForce MicroLife. |
| Mancozeb | Compatible | C | Allow 7 days before re-treatment with BioForce MicroLife. |
| Thiophanate methyl | Incompatible | NC | Allow 14-21 days before re-treatment with BioForce MicroLife. |
| Carbendazim | Incompatible | NC | Allow 14-21 days before re-treatment with BioForce MicroLife. |
| Tebuconazole | Incompatible | NC | Allow 14-21 days before re-treatment with BioForce MicroLife. |
| Propiconazole | Incompatible | NC | Allow 14-21 days before re-treatment with BioForce MicroLife. |
| Chlorothalonil | Incompatible | NC | Allow 14-21 days before re-treatment with BioForce MicroLife. |
| Metalaxyl-M | Incompatible | NC | Allow 14-21 days before re-treatment with BioForce MicroLife. |
| Iprodione | Compatible | C | Limited impact upon population. |
| Fosetyl-Al | Compatible | C | Limited impact upon population. Do not tank mix with BioForce MicroLife. |
| Azoxystrobin | Compatible | C | Limited impact upon population. |
| Herbicides | | | |
| Glyphosate | Compatible | C | Limited impact upon population. |
| Pendimethalin | Incompatible | NC | Allow 14-21 days before re-treatment with BioForce MicroLife. |
| Insecticides | | | |
| Imidacloprid | Compatible | C | Limited impact upon population. |
| Chlorpyrifos | Compatible | C | Limited impact upon population. |
| Others | | | |
| Chloride based liquids | Incompatible | NC | Allow 7 days before re-treatment with BioForce MicroLife. |
| Copper based liquids | Incompatible | NC | Allow 14 days before re-treatment with BioForce MicroLife. |
| Quaternary Ammonium | Incompatible | NC | Allow 7 days before re-treatment with BioForce MicroLife. |
| C = Compatible | | NC = Not Compatible | |



Storage and Stability

Do not store product in direct sunlight.

Do not store product in temperature below 5°C.