

MANGANESEMICROBES

MANGANESE SOLUBILIZING MICROORGANISMS



SOIL MICROBIOTA

ManganeseMicrobes owned by Microendo Inc., is a unique and patented biofertilizer on the market, whose action is based on the activity of the *Bacillus subtilis* bacteria. This type of bacteria naturally lives in the soil near plant roots, where it establishes a mutually beneficial (symbiotic) relationship with the roots. **ManganeseMicrobes** bacteria have the ability to oxidize manganese present in the soil (which is generally not available to the plant) into a more easily assimilable form (Mn^{2+}). In addition, the bacteria produce antifungal molecules such as HCN to protect the plant against pathogens. **ManganeseMicrobes** helps plants access the manganese in the soil that is not in a bioavailable form, thereby reducing the need for manganese fertilization.



BENEFITS

- » Manganese-oxidizing microorganisms.
- » Source of Manganese for the plant.
- » Enhances the plant's photosynthesis.

BIOLOGICAL COMPOSITION

Bacillus subtilis 1×10^{13} UFC/ml

AGRONOMIC USE

ManganeseMicrobes guarantees a 100% organic and high quality product that can be used for the following crops, although this recommendation is not limited to other agricultural crops: **Vegetables in general:** Cabbage, cauliflower, broccoli, compass cabbage, radish. **Fruit trees in general:** Avocado, citrus, peach, guava, mango, coconut, banana, papaya. **Solanaceae:** Tomato, chili, potato, eggplant, pepper **Cucurbitaceae:** Cucumber, melon, watermelon, pumpkins. **Seeds:** maize and sorghum wheat, barley and oats. **Berries:** blueberry, raspberry, blackberry, blackberry. **Other crops:** Celery, asparagus, lettuce, onion, chives, carrot, walnut, pineapple, vine, sugar cane, cotton, agaves, oil palm.

DATA SHEET

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APPLICATION METHOD

ManganeseMicrobes comes from a fresh and metabolically active crop, which is why its use is recommended upon receipt. It should be applied very early in the morning or in the late afternoon, avoiding long hours of direct sunlight and solar radiation.

The product is applied by injecting it into the root or by drenched directly at the base of the plant. Always ensure that the equipment used has not previously had any bactericide or fungicide. Rinse the pump thoroughly before use. It is preferable to use neutral powdered soap. Do not eat, drink, or smoke during applications, and wash your hands before and after using the product.

It is recommended to dilute 1 liter of **ManganeseMicrobes** in the cleanest possible natural water per hectare for crops weighing 1-9 kg. For crops weighing 10-50 kg, use 2 liters per hectare, and for crops weighing 60-100 kg, use 3 liters per hectare. Do not dilute in more than the indicated amount per liter of **ManganeseMicrobes**, because microbial crops require a minimum concentration to be effective.

APPLICATION FREQUENCY

It is recommended to make 2-3 applications per hectare for an optimal colonization of the plant with a frequency of 7-10 days each, which will achieve in the plant a healthy nutrition and defense of the crop.

DOSE

Crop	<i>General</i>
Dose	1 L/1 ha
Frequency	7-10 days
Applications	3 applications

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COMPATIBILITY WITH OTHER PRODUCTS

ManganeseMicrobes is compatible with some fertilizers. In case of applying a bactericide, fungicide, pesticide or insecticide, it is necessary to check the residence time of said product and make sure that the application of **ManganeseMicrobes** is outside this period, as well as wash the material with which the application is going to be made well with neutral soap to ensure that traces of the product are avoided.

Consult your technical advisor for compatibility with other products. It is not recommended to apply **ManganeseMicrobes** if a subsequent application of bactericides, fungicides or any similar product is planned as this would kill the population of microorganisms applied with **ManganeseMicrobes**.

STORAGE AND TRANSPORT

Store the product in cool, covered places at room temperature. Do not expose it to the sun's rays.

TOXICITY

100% organic product. It is not phytotoxic at the recommended concentrations, stages and forms of application. In case of ingestion or discomfort at the time of use, induce vomiting and consult your doctor.

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If you think of microorganisms, think of Microendo.

www.microendo.com.mx

info@microendo.com.mx

33 2603 8388

33 1469 5219