

Manda[®] fermentation

Bring Out the Natural
Vitality of Plants



What Is Manda 31?

Manda 31 is a black pasty product that has a specific gravity of 1.3 and a pH of about 4.0. It is manufactured utilizing know-how that we have accumulated in the process of developing Manda Koso. Manda 31 is manufactured using 41 different raw materials, including fruits, cereals, and edible algae. The process of making Manda 31 involves more than three years of repeated fermentation and maturation, using our own original techniques.

Manda 31 is not an agricultural chemical; the Hiroshima prefectural government approved our registering of it as a “special fertilizer”. Please note that it contains only a small amount of fertilizer component, so be sure to use it in conjunction with conventional fertilization procedures.

Standard Usage

- Dilute by a factor of 10,000
- Spray or irrigate once every two weeks

Note: When a large amount of diluted Manda 31 is required, use 30 ml of Manda 31 per 1,000 m².

- 10 liters of diluted Manda 31 costs only 50 yen!
- 100 ml of Manda 31 is enough for 1,000 liters of diluted solution!



Basic Points to Enhance Effectiveness

- 1 Use on a regular basis throughout the season, from the early growing stage to the pre-harvest period.
- 2 We recommend diluting by a factor of 10,000. A thinner concentration (up to a factor of around 20,000) is also highly effective when applied more frequently.
- 3 Insufficient nourishing water can reduce the effectiveness of Manda 31. Be sure to replenish the necessary amount of nourishing water according to the plant's growth conditions.
- 4 Manda 31 contains a relatively small amount of fertilizing component. Be sure to use it in conjunction with regular fertilization procedures.

How to Apply Manda 31

- 1 Foliar spray
 - ① Spray using a power sprayer
 - ② Spray using a mist blower inside a greenhouse
 - ③ When spraying over a large area, spray a less diluted solution via helicopter
 - ④ Spray using a sprinkler
- 2 Irrigation or injection (into soil)
- 3 Use both foliar spray and irrigation

How to Use Manda 31

- A rough standard of use is 1 liter of diluted Manda 31 per 1 m² for irrigation or for foliar spray. (Increase or decrease the amount according to the size of the plants and the environmental conditions.)
- Apply once every two weeks.



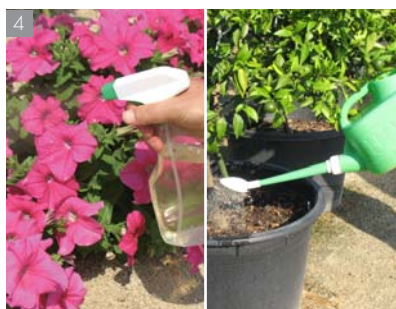
Measure
Measure 1 ml with the measuring spoon provided.



Dissolve in PET bottle
Fill one-third of an empty 500 ml PET (plastic) bottle with water. Place the spoon and Manda 31 (1) together into the PET bottle, close the lid, and shake the bottle well.



Dilute in 10-liter bucket
After the Manda 31 is sufficiently dissolved, pour the contents of the PET bottle (2) into a bucket along with 10 liters of water and stir well.



Spray
Apply to leaves and roots using a sprayer or watering can.

Note: It is recommended to use up all the diluted liquid within a day of preparing it.

Manda 31 Q&A

Actions/Effects

Q

Is it possible to use Manda 31 for pesticide-free production and organic farming?

A. Although Manda 31 does not by itself enable organic farming, it enhances plant activity and thus enables plants to grow in a healthy way. We've received feedback from around Japan that farmers have halved their disease-prevention measures for crops such as tea, apples, pears, strawberries, and tomatoes.



Q

Does Manda 31 have any impact on weeds?

A. We have not specifically done tests for impact on weeds, but we've received anecdotal feedback that using Manda 31 in fruit orchards and vegetable fields may enhance the growth of weeds.

Q

Does Manda 31 exhibit any insecticidal/antiseptic effects?

A. Manda 31 does not exhibit direct insecticidal/antiseptic properties. However, we've received reports from various areas around Japan that using Manda 31 reduces damage from disease and pests, owing to the vigorous growth of treated plants.

Q

For what kind of crops is Manda 31 the most effective?

A. ① It appears that Manda 31 shows its effectiveness sooner for single-year crops than for perennial crops. Having said that, using Manda 31 every year on perennial crops appears to generate a positive cumulative effect.

② It seems Manda 31 has a stronger effect on indoor crops than on outdoor crops.

Usage

Q

How is Manda 31 used?

A. ① Spray it onto leaves using a sprayer or other such tool.

② Apply it to plant roots by means of irrigation/injection.

Q

What about the dilution concentration and its effects?

A. ① Foliar spray generally requires a solution diluted by a factor of 10,000, but it can work effectively with dilution factors between 5,000 and 20,000. For vegetative growth, we recommend a dilution factor of between 10,000 and 20,000; for reproductive growth or quality improvement, a dilution factor of 5,000 is standard.

② When irrigating or injecting, use the same concentration as with foliar spray.

③ When a large amount of diluted Manda 31 needs to be used for spraying, irrigation, or injection, use 30 ml of Manda 31 per 1,000 m².

④ A watering can would be more convenient and effective for small plants or for plants in the seedling stage.

Myanmar Project

Manda Fermentation is engaged in a research project in Myanmar that seeks to contribute to improving agricultural techniques and raising the standard of living for farmers there.



Harvesting for the first time after applying Manda 31 at our experimental farm in Naypyidaw

Enhances Plant Growth

Paddy rice roots grow thicker

Three weeks after planting the seeds, the rice where Manda 31 was applied had more roots and rootlet growth compared to rice without Manda 31.

- Comparison of root growth in the seedling stage



Improves Yield and Eating Quality

Paddy rice yield increases and rice tastes better

Spraying Manda 31 with a dilution factor of 10,000 ten times, with each spraying spaced ten days apart, increased the number of stems per rice plant and the number of rice grains per panicle. Consequently, the yield per rice plant increased and the total yield of paddies treated with Manda 31 increased. Rice was found to exhibit fewer flaws and a better flavor.

- Cropping rice in a paddy in Naypyidaw



- Comparison of the number of rice grains



Disaster Recovery

Excellent resistance to lodging

The cross-section of the stems of rice treated with Manda 31 is round and the stems themselves are tough. Consequently, Manda 31 paddies can be said to produce rice with excellent lodging resistance. The photo to the right was taken during the cropping season. In the area treated with Manda 31, there are fewer instances of lodged rice compared to areas without Manda 31.

- Paddy in Naypyidaw. Strong winds have lodged the rice.



Manda 31 Is Effective on Other Plants

Applying Manda 31 has resulted in increased yields for sesame seeds and peanuts. Fruit vegetables such as watermelons, tomatoes, and melons were uniform in size and yields were stable, with less fatigue from bearing fruit. Quality and yield improvement was seen in fruit trees such as grape vines. Root vegetables such as potatoes were uniform in size and tasted better. Leaf vegetables such as spinach grew faster and had a less bitter taste.



Watermelon



Bitter gourd