



WASTE DECOMPOSER IS A BOON FOR ORGANIC FARMING

There is an environmental imperative to reduce the amount of resources we consume and to minimize the production of waste. A large portion of the waste we generate is biodegradable, recent research suggesting that up to 68 per cent of household waste is biodegradable including kitchen waste, garden waste, paper, card and natural textiles. When biodegradable waste breaks down in the absence of oxygen it releases methane, a powerful greenhouse gas. Most of the UK's waste is currently buried in the ground in landfill sites, which pollutes the soil and water as well as producing methane. The EU Landfill Directive in 1999 set targets for diverting the biodegradable fraction of municipal waste from landfill sites, which means that by 2010 the UK has to reduce the amount of biodegradable municipal waste landfilled to 75% of that produced in 1995. The present practice is usually to burn agricultural residues or to leave them to decompose. National Centre of Organic Farming, Ghaziabad has developed a product called Waste Decomposer to overcome this problem. It is a consortium of few beneficial microorganisms which is isolated by Krishan Chandra 2004 from desi cow dung. Waste decomposer

works as Biofertilizer, Biocontrol, and as well as Soil health reviver. It can also be used in various ways such as quick composting of bio wastes, drip irrigation, foliar spray as biopesticide against most of the plant diseases for all types of agriculture and horticulture crops, in-situ composting of crop residue and seed treatment. Waste decomposer microorganism produces primary metabolites that are a precursor of anti-microbial compounds; it also produces a variety of antimicrobial secondary metabolites including polyketides and alkanes. These antimicrobial metabolites facilitating in the field crop which controls the number of diseases. Besides this, it also produces glucanase and α -1,3glucanase enzymes which trigger defence mechanism of the plant.

Salient Features of waste decomposer

- Simple & Reliable
- Ready to use (within 5 days)
- Longer shelf-life (3 years)
- No Structure, Pit or equipment require
- Recommended for all crops
- Better crop response
- Works as a great component for clean India Movement (Swachh Bharat Mission) by converting bio-waste into organic Manure
- Low cost (only Rs. 20 per bottle)
- Quick and healthy compost
- More than 1 lakh metric tonne organic manure could produce from 1 bottle per year by farmers

Mass multiplication of Waste Decomposer

Waste decomposer is given to the farmers in small bottles and they themselves mass multiply this product without using any sophisticated technique.

Process of Mass multiplication

Take 2 kg jaggery and mix it in a plastic drum containing 200 litres water. Now take 1 bottle of waste decomposer and pour all its contents in a plastic drum containing jaggery solution. Mix it properly with a wooden stick for uniform distribution of waste decomposer in the drum. Cover the drum with a paper or cardboard and stir it every day once or twice. After 5 days the solution of drum turns creamy.

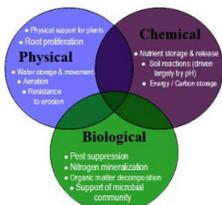
Application of Waste Decomposer

Waste decomposer not only decomposes the bio-wastes, but it can be used in multiple ways.

- **Biopesticide** : The mass multiplied liquid waste decomposer culture is diluted in the ratio of 1:3 with water and applied as a foliar spray to control pest and diseases. It can control all types of soil borne, foliar diseases, insects, and pests.



Increase the earthworm population with in six months of regular use



Changes biological and physical properties of all types of soil



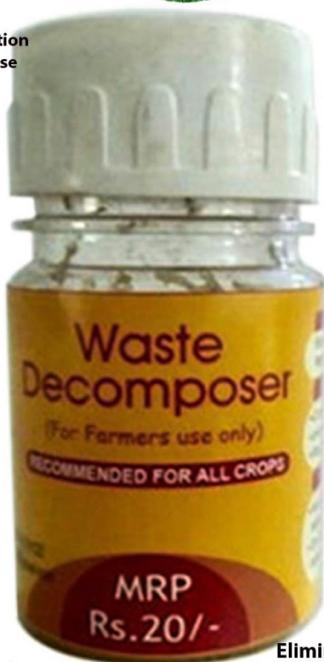
Seed treatment for uniform germination and provide protection



All biodegradable material like agro waste, animal waste, kitchen waste to organic compost within 30 to 40 days



Controls all type of bacterial, fungal and viral diseases effectively



Eliminate upto 90% uses of all types of pesticides/fungicide/insecticide. There is no need of urea, DAP or MOP

• In-situ composting of crop residue :

- Spray the solution on the post-harvest stalks of crop plants flooded with water and leave it for few days.
- In water stress areas just sprinkle the solution on crop residue and when the farmer does the irrigation in field the process of decomposition starts. The above 200 litre preparation can be used for 1 acre crop residue as in-situ composting.
- **Drip irrigation :** For the revival of soil health and as biofertilizer for the crop, waste decomposer is used during irrigation in the field by mixing the mass multiplied solution with water. 200 litres of waste decomposer solution is enough for 1 acre land.
- **Seed Treatment :** Simply spray/sprinkle the waste decomposer solution uniformly over any type of seeds. Leave the treated seeds under shade for 30 minutes. After 30 min. the seeds are ready for sowing. Various seed borne diseases are controlled by waste decomposer.
- **Foliar Spray :** The mass multiplied liquid waste decomposer culture is diluted in the ratio of 1:3 with water and applied as a foliar spray to control pest and diseases.

Multi-potent efficiency of Waste Decomposer

- **Disease Management :** Waste Decomposer has a great potential to control a variety of fungal bacterial and viral diseases effectively in



different crops. Damping off disease in Chilli, Tomato, Brinjal peanut, potato soybean, maize cabbage etc, Rhizome rot disease in Ginger, turmeric, onion etc, Root rot disease in citrus, methi, berseem, pineapple, etc, Wilt disease in Banana, Cotton, Tomato, Brinjal, Chilli, peanut, potato, coffee, balck pepper, lychee etc, Sheath blight disease in rice, maize etc. Apart from the above said farmers have reported that their crops have no attack of any pests and diseases due to the usage of waste decomposer solution spray at regular interval and leaving the solution with irrigation water. Therefore, farmers found happy due to the luxuriant crop growth and good yields.

- **Crop quality and yield** : Good quality of crop and high yields are the desired feature of any crop by any farmer/producer across the globe. Waste Decomposer is a promising tool for good quality of crop and high yields. It was reported by the farmers that usage of waste decomposer in their fields has resulted in the luxuriant growth of the crop. Potato producers have reported that they have harvested the potatoes with bare hands only as the soil has become soft and tender due to the usage of waste decomposer. Pomegranate producers have reported that they have harvested good quality and very shiny pomegranates than that of yester years.

Application of waste decomposer in soil

- **Soil Physicochemical and Biological Properties** : Waste Decomposer application changes the biological and physico-chemical properties of soil, thereby soil becomes favorable for plant growth. The biological properties of the soil seemed to change tremendously in terms of increase in beneficial macro and micro soil biota, as already mentioned, innumerable quantity of earthworms in the field is the identifiable aspect of the Waste Decomposer soils. The texture and structure of the soil are changed in tune with supporting plant growth. Further, farmers reported

that weed pattern/system slowly declined. It is also noted that the Waste Decomposer microorganisms have the potential for producing extracellular enzymes which help in inhibiting the growth of soil borne pathogens. Biological control by Waste Decomposer is known as a combination of different mechanisms among which the most important are 1. Competition for nutrients 2. Production of volatile & non-volatile antibiotic compounds adhering the plant roots and root hairs.



- **Soil salinity** : Soil salinity refers to the presence of high concentrations of soluble salts in the soil moisture of the root zone. These concentrations of soluble salts, through their high osmotic pressures, affect plant growth by restricting the uptake of water by the roots. All plants are subject to this influence, but sensitivity to high osmotic pressures varies widely among plant species. Salinity can also affect plant growth because the high concentration of salts in the soil solution interferes with a balanced absorption of essential nutritional ions by the plants. The main effects of salinity on plant growth and crop production are: The spread of plant pathogenic fungi which cause damping-off, wilt and root-rot diseases, agricultural soil Slow and insufficient germination of seeds, Physiologic drought, wilting, and desiccation of plants; Stunted growth, small leaves, short stems and branches; Blue-green leaf color; Retarded flowering, fewer flowers, sterility, and smaller seeds; Growth of salt-tolerant or halophilous weed plants; As a result of all these unfavorable factors, low yields of seeds and other plant parts. As a result, the need of an hour is selection for some eco-friendly biocontrol agent that is resolving the above-mentioned problems.
- **Seed Germination** : Waste decomposer is a new technique of seed treatment that involves the application of beneficial microorganisms on seed surface followed by seed hydration. Seed treatment is an ecological management strategy to control much seed and soil-borne pathogens which provide an alternative to chemical treatment. Seed treatment enhances the initial step of plant development by increased seed germination and provides protection before seedling emergence. The growth of seed can be observed at least 4 days in advance over chemical. Some farmers reported 98% seed germination after sowing with waste decomposer treated seeds. It has a remarkable effect on alleviating the adverse effects of salt stress on seedlings and seed germination.

Waste Decomposer seed treatments help to control soil borne diseases and also enhances plant growth and yield as it got the ability to alleviate biotic stress (seed and seedling disease caused by soil borne pathogens) and abiotic stresses (osmotic, salinity, chilling, or heat shock). Further waste decomposer proved to have the ability to overcome physiological stress (poor seed quality induced by seed aging).



Contact for More Information

Organic Farmer Producer Association of India

Sunrise Organic Park

Inside- Pinjara Pol Gaushala, Tonk Road, Jaipur, Rajasthan- 302032

Mobile :

97850-15005, 98875-55005, 81073-79410,
83291-99541, 96100-02243, 78919-55005

E-mail :

- atul.hcms@gmail.com
- info@iiaasd.com
- organic.naturaljpr@gmail.com
- info@sunriseagriland.com
- sunriseagrilandb2b@gmail.com

Website :

- www.hcms.org.in, • www.iiaasd.com
- www.sunriseagriland.com

Important Links:

- <https://www.hcms.org.in/ofpai.php>,
- <https://www.hcms.org.in/sunrise-organic-park.php>
- <https://www.hcms.org.in/mai-hu-kisan.php>
- <https://www.hcms.org.in/organic-maures-and-pesticides.php>



हरीकृषि व वैदिक कृषि संस्थान

