

# Jainum

Food & Waste Projects Pvt. Ltd.



# ORGANO CONVERTER

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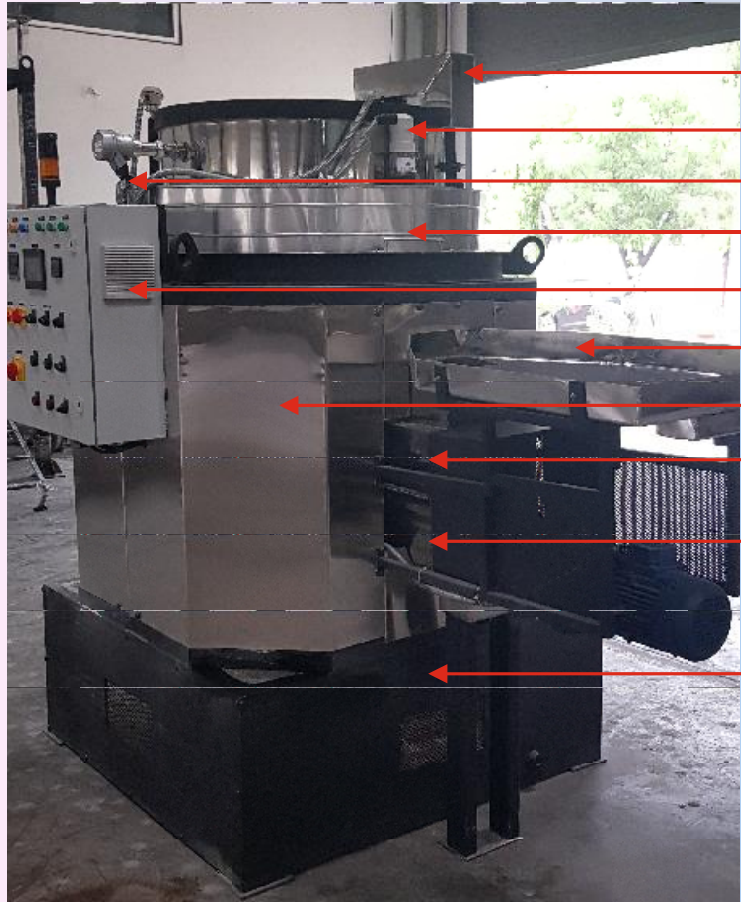




## KEY FEATURES OF JFW-OC

- Made up of Stainless Steel for better durability.
- Fully Equipped with controlled Heating, Hot Air input and Exhaust System.
- Sorting Table for removal of any non-organic or inappropriate material.
- In-built Shredder for size reduction of Organic Waste.
- Screw Press Feeder for shredding of waste and removal of excess water from the material.
- Innovative Heating System, in the form of Oil Immersed Heaters, for optimum control of Ambience Temperature.
- Fully automated unit with HMI & PLC controls.
- Higher Processing volume with regards to processing capacity, to allow more retention inside the unit.
- Single point feeding with Continuous operation (Optional).

# ORGANO CONVERTER



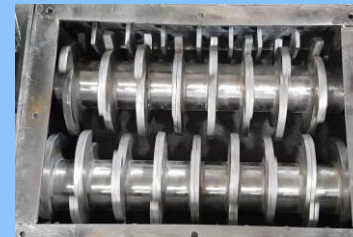
- Exhaust System
- Electrical Heater
- Level Sensor
- Insulated Oil Jacket
- HMI Control Panel
- Sorting Table
- SS Enclosure
- Shredder
- Bottom Feeder
- Supporting Structure



**HMI with PLC  
(Full Touch)**



**SCREW PRESS  
FEEDER**



**SHREDDER  
(In-built)**



# ORGANO CONVERTER WITH CURING CHAMBER



Top Discharge Unit

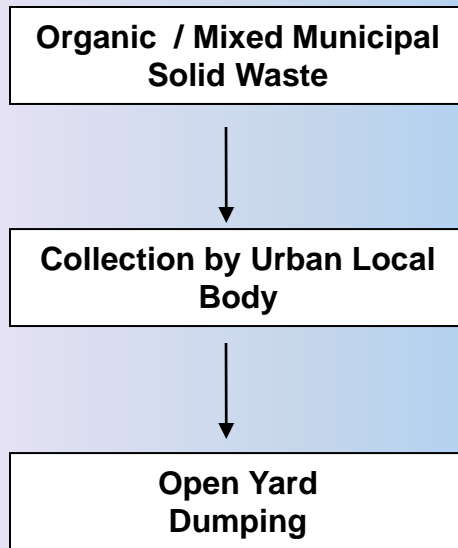
Curing Chamber



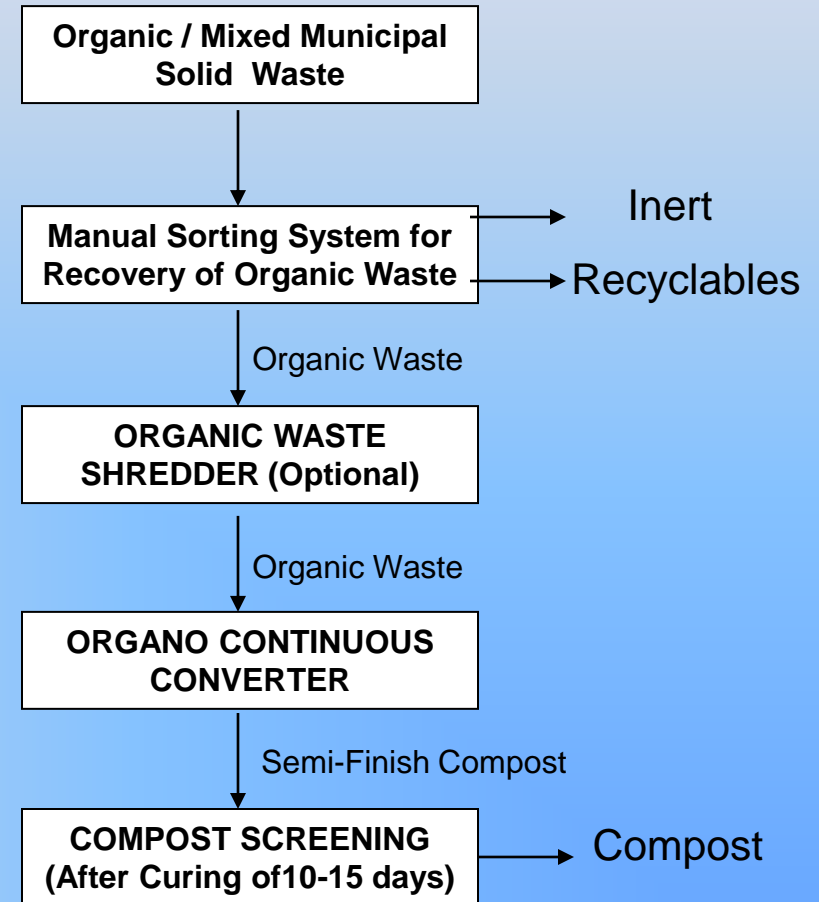
# ORGANIC WASTE MANAGEMENT (Capacity 25 Kg – 20,000 Kg Per Day)

# MSW PROCESSING

## Present Scenario



## Proposed





# PROCESS



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**SORTING TABLE  
(Manual)**



**ORGANIC WASTE  
SHREDDER (Optional)**



**Aerobic Composting in  
controlled environment  
reducing the in feed  
volume down to 10-15%.**



**Storage at Curing  
Section for further  
Digestion and Maturity  
of Compost**



**REFINEMENT  
SECTION (Optional)**



**Mixed Hotel Waste and / or  
Organic Kitchen Waste**



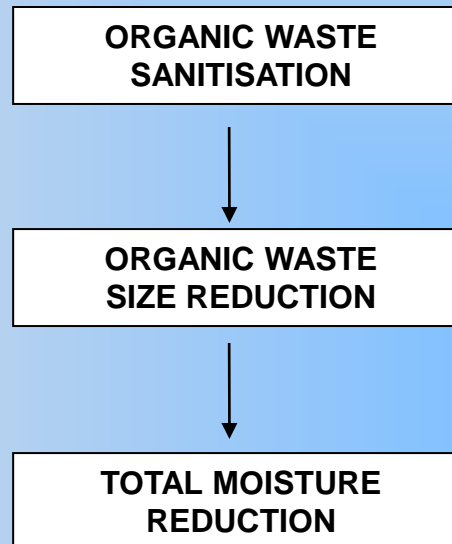
**Inorganic Fraction  
Like Plastic, paper etc.**

**ORGANIC MANURE**



## PROCESS REQUIREMENT

- Composting is, purely, a natural process completed by Aerobic Bacteria.
- Machine is expected to do following tasks :



## PRE-SORTING

- Organic Hotel / Kitchen Waste is brought to the facility and dumped on the Sorting Table for picking out any non-organic content present in the Organic Waste.
- Sorting Table is attached to the Organo Converter and a bottom feeder is provided below it to take the entire material inside the machine.
- Sorting Table is also provided with Drain to take out any excess moisture present in the material.
- If, Mixed Municipal Solid Waste is brought to the facility, then it is put into the Pre-sorting Facility for segregation of Compostable, Recyclable and Inert waste.





**Manual Sorting of the Organic Waste to remove non- organic and inert waste present in the material.**

## SHREDDING

- Organic Waste, coming out of the Pre-Sorting Section or directly at receiving platform , is fed into organic waste shredder.
- Smaller Units uses in-built Shredder for size reduction of Organic Waste.
- Shredder, reduces the size of the organic waste to a nominal size to be allowed to fed through a bottom feeder of the Sanitiser.

**SHREDDER**





## **SANITISATION**

- After shredding organic waste is dumped into the ORGANO CONVERTER for Sanitisation and conversion of this matter into compost.
- Sanitiser is a bottom feed unit and has a bottom discharge.
- Even if shredder is not used, moderate size matter reduces in size during process in ORGANO.
- Excess water is also removed from the system during bottom feeding of the material.

## **SANITISATION & DIGESTION**

- An Organic waste accelerator is added into the equipment for acceleration of digestion process.
- Saw Dust is also added to the matter if the organic waste have a very high moisture content.
- Some amount of Old processed material is also left in the system.
- Digester gets filled up with fresh material every day and some amount of semi-cured product is withdrawn from the Unit.
- Digester has a bottom feed and medium / top discharge gate.

## COMPOSTING & CURING

- For higher capacities, after Sanitisation, processed material is transferred to next Organo Converter – Curing Chamber which will process it further.
- Processed material will be further composted in this unit.
- Continuous Composting is possible with this system, making it much faster and high capacity processing machines.



Compost Heaps



Compost Heaps

## CURING CHAMBER





## CURING SECTION

- Material is kept here for 5 – 10 days, in open area, in a heap form.
- It is periodically aerated to achieve proper aerobic composting and moisture is also added, if required.
- Alternatively, Curing Chamber is used to make the entire system fully automated.
- Curing Chamber is an aerated chamber for digestion and stabilization of the compost prepared in Organo Converter.
- Curing Chamber has a top feeding unit and bottom discharge unit.



# BENEFITS

## **BENEFITS OF ORGANO CONVERTER**

- Aerobic Composting, done by ORGANO CONVERTER, of organic kitchen / hotel / mandi waste can yield very high quality compost.
- Unlike Anaerobic Digestion ( used for Biogas Generation) Weed-seed, Pathogens, etc. are eliminated during this process, resulting in production of high grade organic compost.
- Proper conditions are maintained in the ORGANO CONVERTER for the development of useful bacteria and, consecutively, its utilization for conversion of organic waste into compost.
- Organic Waste can be dumped in the machine, as and when it is generated, hence, no additional storage space is required for them and, also, no wait for sweepers to pick it up from your place and take it away.
- Our ORGANO Converter uses, Screw Press upfront (at the feeding point) to allow de-watering of the Organic Waste outside the ORGANO. This helps in reducing energy required for the Rapid Composting Process.

## **BENEFITS OF ORGANO CONVERTER**

- ORGANO is designed with HMI and PLC control to operate round the clock on its own. Programming can be updated /changed very easily as per requirement.
- ORGANO drastically reduces the volume of Organic Waste and hence its CURING process requires very less space to operate.
- Maintains right environment for Aerobic Composting in all seasons, be it a summer, winter or monsoon season.
- Facility can operate close to residential area and even within it, as it generates negligible foul odour.
- Our ORGANO CONVERTER can take waste on continuous basis and it is not necessary to empty out material every day.
- Our ORGANO CONVERTER also comes with a unique “CURING CHAMBER” (as Optional Unit). This directly replaces the Open Spaces required for Curing Section with a fully automated Vertical Chamber. This chamber not only Cures the Semi-finished Compost, but, also acts as a Bio-Filter for Odour Control and, finally, yields the finished compost without the human interference.



## **BENEFITS OF ORGANO CONVERTER**

- Our ORGANO CONVERTER is easily scalable and capacity can be increased by simply adding another unit in line with the initial one. This avoids installing another set of Feeder and Sorting Plant.
- As, ORGANO CONVERTER, can be operated round the clock and round the year, with no additional requirement for Monsoon Shed for operations during monsoon.
- No requirement for large open spaces for Pits (Anaerobic) / Windrow (aerobic) composting, thus, reducing the initial capital investment and space requirement.
- Eliminates the requirement for Windrow Turning, thus, drastically reduces the operation cost of the plant and eliminates requirement of additional turning equipments.
- With the use of ORGANO CONVERTER, your project can save a lot on :
  - Land Area Required.
  - Capital Cost.
  - Operation & Maintenance Cost.



# THANK YOU

## **Administrative Office :**

408, Apollo Square, 7/2, Dr. RSB Marg

Near Janjirwala Square

Indore - 452002 (M.P.) India

Ph.No. +91-731-2539667, Fax: 2539667

Mob: +91-8109624337 , 9425065857

Email : [jainumprojects@gmail.com](mailto:jainumprojects@gmail.com)

## **Factory Office :**

39-D, A.B. Road Industrial Area No. 1,

Behind TATA Exports,

Dewas - 455001 (M.P.) India

Email : [factory@jainumprojects.com](mailto:factory@jainumprojects.com)

Website: [www.jainumprojects.com](http://www.jainumprojects.com)