



Themis

Biotechnology & Life Science

WRT-X[®]

**COMPACT UNIT
FOR THE REGENERATION
OF ORGANIC WASTE**





Themis
Biotechnology & Life Science



WRT-X
RECOVERY AND VALORIZATION
OF FOOD ORGANIC WASTE

WE ARE MEMBERS OF



Certificate no. IT21-14108C



Certificate no. IT21-14108B



Certificate no. IT21-14108A

THE PROBLEM

FOOD WASTE IS ONE
OF THE **BIGGEST CHALLENGES** FOR
BUSINESSES AND COMMUNITIES.

Every year, 1.3 billion tons of food waste are generated worldwide, with a large portion coming from supermarkets, restaurants, corporate and collective cafeterias. Traditional disposal solutions are costly, inefficient, and highly polluting, relying on continuous transportation and landfills. In addition to economic and environmental waste, these systems eliminate the nutritional and organoleptic value of the scraps, which could be reused.

But what if we could **recover them** and turn them into **value**?





OTHERS THROW THEM AWAY.



**YOU CAN GIVE THEM
A FUTURE.**

THE SOLUTION

WRT-X[®]

THE SYSTEM THAT TRANSFORMS EVERY WASTE INTO VALUE

WRT-X doesn't just dispose of waste, it regenerates it.

Through an innovative process,
it recovers 100% of the treated material.



HOW IT WORKS

The system is capable of processing **food waste of animal, vegetable, or mixed origin**, efficiently managing any type of **organic waste**.



The operation is simple and efficient: once the organic waste is placed into the machine, the operator selects the program most suitable for the type of material to be treated. The product is then appropriately heated and dehydrated at low temperature under negative pressure. During the process, enzymes and natural microorganisms specific to each type of waste are automatically added, promoting dehydration and enhancing the final dehydrated product.



Unlike traditional methods, which simply dissolve waste and discharge it into the sewage system, or require costly disposal methods, **WRT-X recovers and valorizes every element, transforming it into a valuable resource**. The resulting product, thanks to its properties, can be reintegrated into various sectors, creating **new usage opportunities** and generating **tangible economic value**. This innovative approach not only **eliminates the reliance on external transport** but also **drastically reduces operational costs** and **contributes significantly to the decarbonization of the sector**.

ADVANTAGES

Compact, sustainable and compliant with regulations, WRT-X reduces waste, emissions and operating costs. Ideal for small spaces, optimizes logistics and improves operational efficiency.

ENVIRONMENTAL SUSTAINABILITY

WRT-X revolutionizes organic waste management by transforming it into reusable resources, actively contributing to the reduction of food waste. Its circular approach is perfectly aligned with ESG principles, promoting a more responsible and efficient production model.

DECARBONIZATION

Thanks to its low-energy operation and minimal resource usage, WRT-X represents a concrete solution for reducing CO₂ emissions and accelerating the path toward climate neutrality.

COST SAVINGS AND OPERATIONAL OPTIMIZATION

The machine helps reduce costs related to waste disposal and internal logistics, while simultaneously decreasing the need for labor. The result is a more streamlined, cost-effective, and sustainable process.

QUICK PAYBACK AND IMMEDIATE VALUE

WRT-X allows for an immediate tangible financial return, thanks to the ability to reintroduce the final product into the market, adding value across various sectors.

COMPACT SIZE AND VERSATILITY

With a compact and modular design, WRT-X easily integrates into professional kitchens, canteens, hotels, or industrial spaces with limited square footage. It eliminates the need for prolonged waste storage, enhancing safety and reducing the risk of infestations.

REGULATORY COMPLIANCE

Designed to comply with current regulations on organic waste treatment, WRT-X offers a reliable solution that meets environmental requirements, facilitating the adoption of more sustainable practices from a legislative standpoint as well.

APPLICATION SECTORS



RETAIL & CATERING

- Restaurants
- Fast food
- Catering
- Food industry
- Supermarkets

PUBLIC AND PRIVATE SECTOR

- Hospitals
- Nursing homes
- Schools
- Canteens
- Airports



The Horeca sector faces the problem of food waste every day, caused by overproduction, excessive portions, poorly managed stock, and unrealistic aesthetic standards. This results in high costs and significant environmental impacts. WRT-X helps reduce and treat waste sustainably, turning waste into an opportunity for savings and environmental responsibility.

The public and private sectors, including schools, hospitals, and corporate canteens, face common challenges in managing food waste, with high costs and environmental impacts. Overproduction and poor resource management lead to significant waste. By adopting WRT-X technology, it is possible to optimize processes, reduce costs, and actively contribute to more sustainable management and a lower ecological impact.



HOSPITALITY AND ENTERTAINMENT

- Hotels
- Resorts
- Amusement parks
- Conference centers
- Shopping malls
- Cinemas

MARITIME SECTOR

- Cargo ships
- Offshore platforms
- Cruise ships



Food waste is a significant problem for hospitality establishments, trade fairs, and events, where overproduction and inefficient stock management lead to substantial waste. The difficulty in predicting demand, combined with the need to offer a wide variety of options for guests, results in a considerable amount of unused food. WRT-X offers an effective solution, allowing for waste reduction, cost savings, and improved environmental impact.

Food waste on cruise ships, cargo ships, and platforms can generate enormous costs, not only for the food itself but also for the transportation and storage of waste. Ships produce about 60% more waste than the terrestrial average due to overproduction of food. Themis WRT-X allows waste to be treated on-site, improving waste management, optimizing processes, and perfectly adapting to any type of space.

THE INVISIBLE POWER OF NATURE AT THE SERVICE OF INNOVATION



NATURE AS AN ALLY.

BIOTECHNOLOGY AS A DRIVING FORCE.

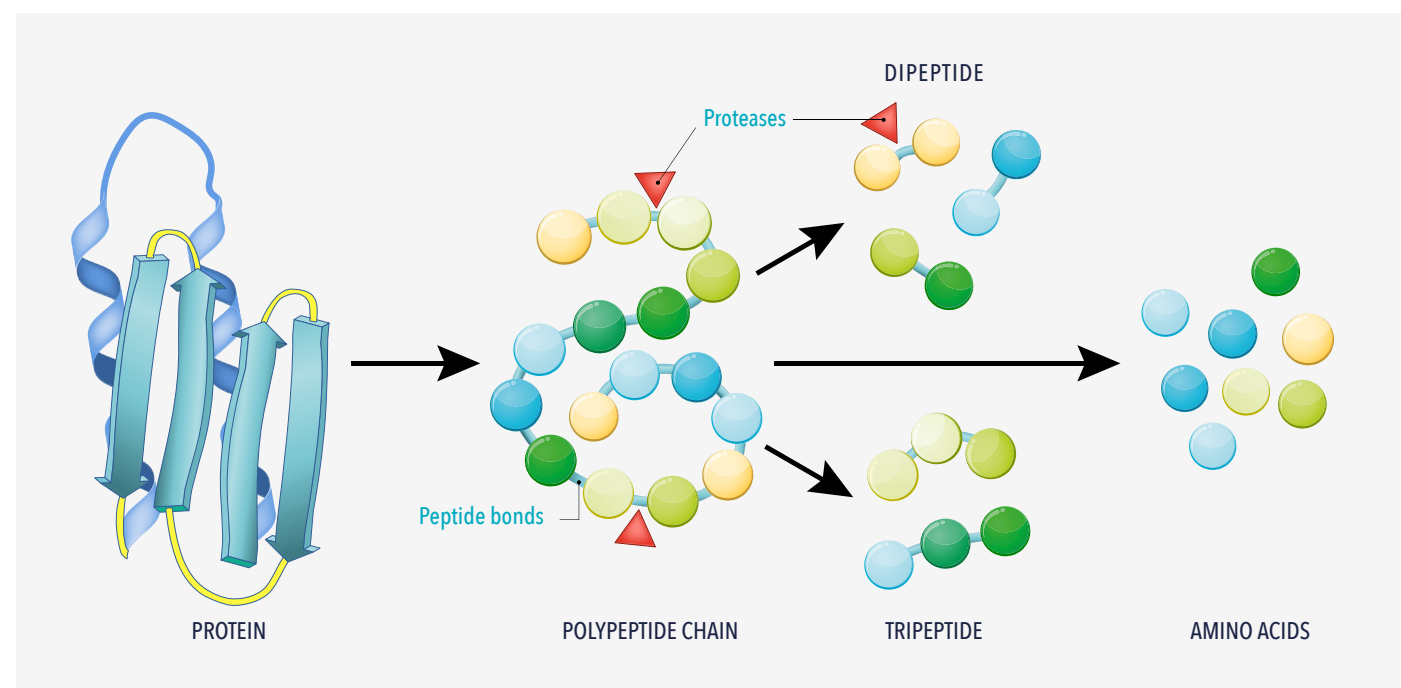
CIRCULARITY AS A VISION.

Enzymes: The Silent Power of Nature that Transforms Waste into Resources

Enzymes are extraordinary, selective, and ultra-efficient proteins: true *biological micromachines* capable of accelerating complex chemical transformations quickly, safely, and sustainably.

At the heart of our **WRT-X technology**, the **Zyme+** enzyme mixtures activate a natural yet enhanced process: they **break down the complex molecules of food waste**, liquefy them, and prepare them for effective separation.

Proteases, lipases, amylases, cellulases, and pectinases work in synergy to degrade proteins, fats, carbohydrates, fibers, and pectins, transforming waste into simple, easily biodegradable elements that are ready to be valorized.



The mechanism of "cutting" by enzymes on a protein

The patented **WRT-X technology** by Themis is an advanced solution for the sustainable management of organic waste.

In two stages, it transforms a problem into a resource.

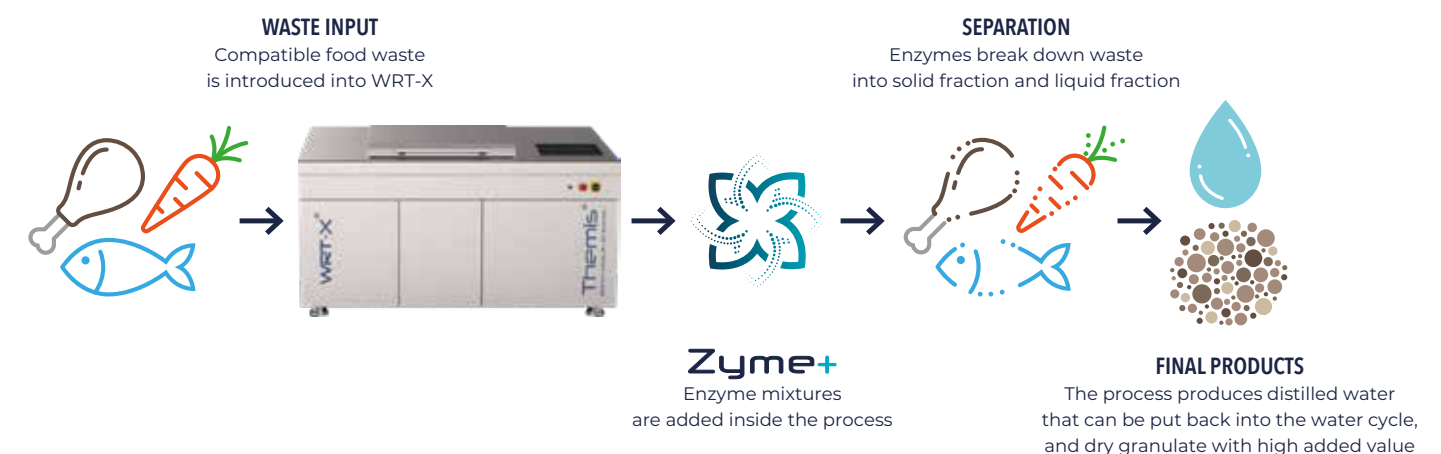
1 Enzymatic degradation

In the initial phase of the process, the **Zyme+** enzyme mixtures come into play, specially formulated to accelerate the transformation of organic waste. These enzymes quickly attack the complex molecules present in the organic material - such as proteins, fats, starches, and fibers - breaking them down into simpler compounds. The result is a pretreated liquid fraction ready for the subsequent stages of processing.

2 Physical Separation

Once enzymatic degradation is complete, the system activates a physical separation process, which divides the treated material into two distinct components:

- a dehydrated solid fraction rich in stabilized organic matter, ideal for being valorized as a soil amendment or natural biostimulant;
- a distilled liquid fraction, which can be reused according to the specific needs of the process or safely returned to the water cycle.



WRT-X & Zyme+

Bioinnovation that transforms waste into resources



RAPID AND EFFICIENT REACTIONS

The Zyme+ enzyme mixtures act by optimizing treatment processes and ensuring a substantial reduction in the initial volume of waste.



ODOR REDUCTION

Targeted enzymatic degradation minimizes the formation of foul smelling compounds, improving the working environment and reducing the need for ventilation systems or air filtration.



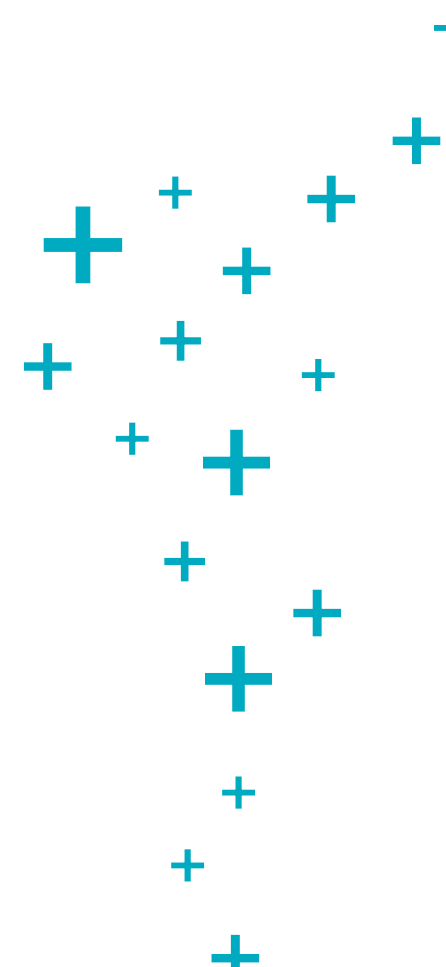
SUSTAINABILITY AND REDUCED ENVIRONMENTAL IMPACT

WRT-X avoids the production of unusable by-products and drastically reduces the need for waste transportation, cutting emissions associated with logistics.



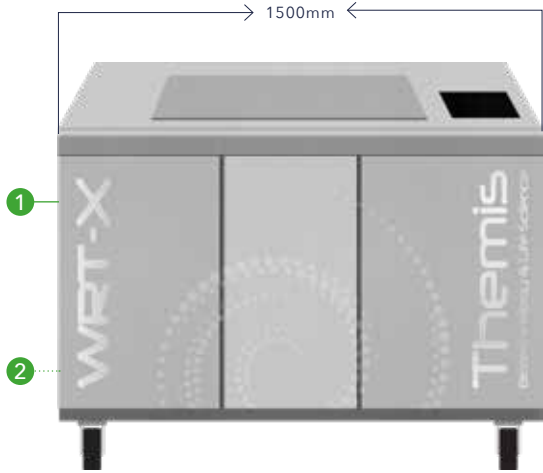
APPLIED CIRCULAR ECONOMY

The recovered solid fraction can be valorized as organic fertilizer and biostimulant. Nothing is wasted, everything is transformed.



THE RANGE

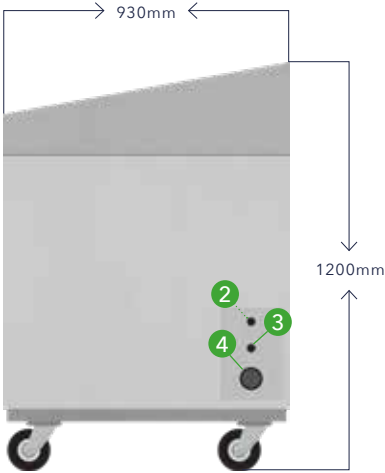
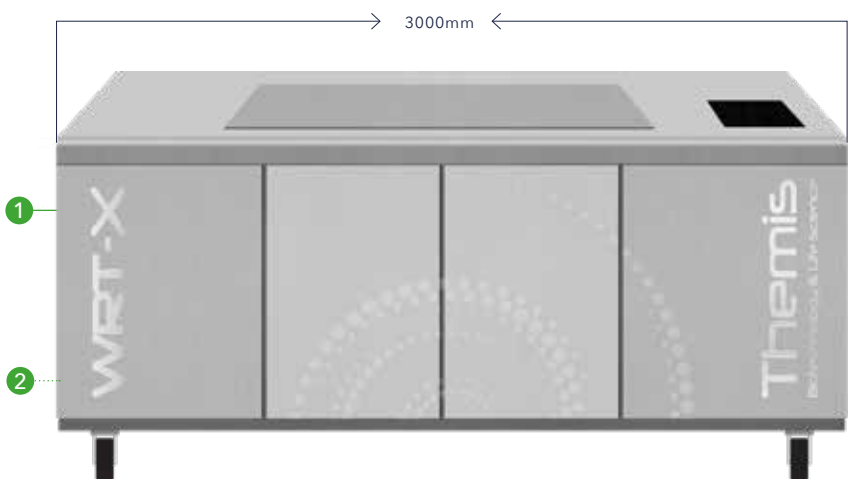
WRT-X THM50



WRT-X THM100



WRT-X THM200



- 1 Service plugs for electrical and communication connections
- 2 Power supply inlet: configurable on right / left side, with optional cable and plug
- 3 Clean water inlet 1/2" GAS F
- 4 Drain connection 1" GAS F

INSTALLATION AND REQUIREMENTS

Power supply
Dedicated 400V/3ph+N/50Hz
On request: 460V/3ph+N/60Hz
or other voltages

Water Drain
1" GAS F threaded connection

Clearance Space
At least 70 cm of free space
on both sides of the machine
to allow for maintenance

* Indicative images

MAIN FEATURES

- Food-grade stainless steel structure
- Low noise operation
- Touch screen HMI interface
- Safety switch on the product loading door
- Safety push button
- Integrated weighing system for controlling treated waste, with the ability to download data via Ethernet or USB
- Generation of reports and summary tables
- Ability to integrate with existing systems, Cloud platforms, or others
- Use of specific enzymes
- Dedicated and pre-set recipes for each sector
- High process speed



WRT-X REQUIRES WATER
ONLY DURING THE WASHING PROCESS,
DRASTICALLY LIMITING
WATER CONSUMPTION



WITH ZERO CO₂ EMISSIONS
AND CLEAN WATER OUTPUT,
IT SIGNIFICANTLY IMPROVES
YOUR CARBON FOOTPRINT

TECHNICAL DATA	UM	THM50	THM100	THM200
Width	[mm]	1500	2000	3000
Height	[mm]	1200	1200	1200
Depth	[mm]	930	930	930
Weight	[kg]	800	1200	1800
Installed electrical power	[kg]	4	5,4	6
Estimated electrical power in operation	[kW]	2	2	3
Treatment capacity	[Lt]	50	100	200
Batch processing	[hour]	8	8	8

** The data shown in the table are indicative. Themis may change all data without prior notice.

TOGETHER WE CAN.

With **Themis WRT-X**, innovation and sustainability come together for a better future.

Choosing **Themis** means choosing a greener world: every act counts, every choice can make the difference.



*Themis WRT-X:
because the future belongs
to those who can transform it.*

MAKE IT
green
AGAIN



Themis
Biotechnology & Life Science



themis-industries.com

Themis S.p.A.
Via Brescia, 13 | 20025 Legnano (Milan - Italy)
+39.0331.456228
info@themis-industries.com



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