



## FAST FERMENTATION SYSTEMS



**IN 1 DAY**  
FERMENTED FEED AND  
ORGANIC FERTILIZER

DON'T TRASH  
YOUR FUTURE:  
*Recycle*



ZERO  
WASTE



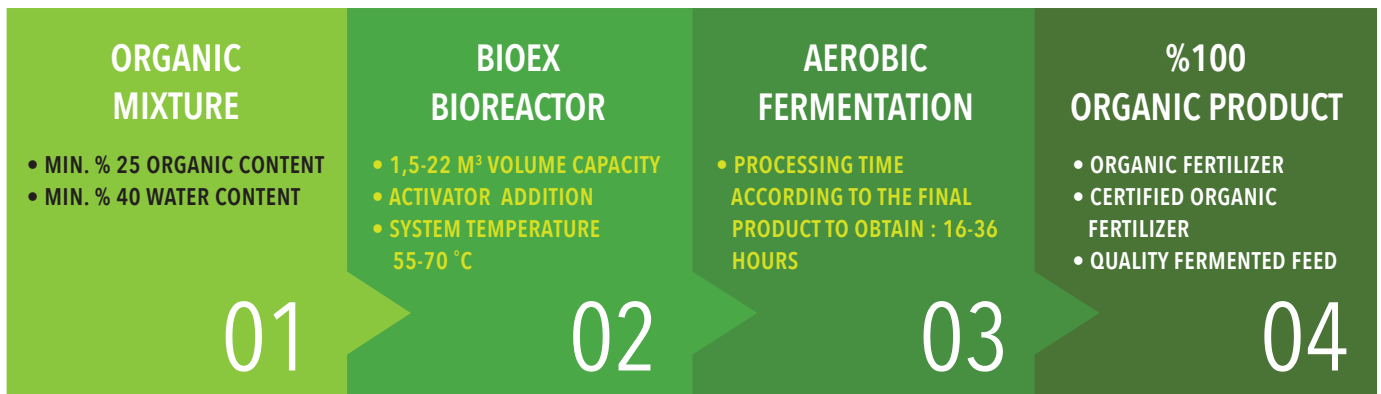
## What is **BIOEX?**

Our **BIOEX Fast Fermentation System** has been developed and designed by our Founding Engineers with a 3-year R&D study in order to recycle organic waste on-site where it occurs and win it back in to the economy.

The system consists of the BIOEX Activator and the BIOEX Bioreactor, which provide the suitable environment for the operation of BIOEX activator. **With the technology we have developed, organic waste is fermented within 1 DAY and converted into organic fertilizer, fermented feed or biomass.**

Fast fermented products are obtained in high quality, odorless and completely free from pathogens.

## How it **WORKS?**



- 01** The organic waste loaded into the BIOEX Bioreactor is homogeneously mixed.
- 02** The BIOEX Bioreactor prepares the most favorable conditions for microorganisms that are critical in the Fast Fermentation System. A specific amount of BIOEX Activator, depending on the raw material, is added to the Bioreactor. The system is brought to a suitable temperature.
- 03** This activates the BIOEX Activator and the fermentation begins. Depending on the humidity of the raw material, the process takes 16 - 36 hours.
- 04** On average, a ready-to-use organic end product is obtained after 1 day.

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## What are the GAINS?

✓ **COMPLETE COMPLIANCE WITH THE ZERO WASTE REGULATION!**

✓ **BY PRODUCING**



**QUALITY FERMENTED ANIMAL FEED**



**ORGANIC FERTILIZER**



**CERTIFIED ORGANIC FERTILIZER**



**WASTE-DERIVED FUEL**

FROM ORGANIC WASTE COLLECTED IN PLACES SUCH AS HOTEL, UNIVERSITY CAMPUS, DORMITORY, CAFETERIAS, RESTAURANT, MARKET, FRUIT & VEGETABLE MARKETS, PRODUCTION FARMS, PARK & GARDEN AND TREATMENT PLANTS **YOU WILL CONTRIBUTE TO THE NATURE AND THE COUNTRY ECONOMY!**

✓ **GAINS ARE ACHIEVED THROUGH THE USE OF THE PRODUCED FEED AND FERTILIZER IN PARKS, FARMS, PLANTS, HOTELS AND INCOME THROUGH THE SALE AS A "COMMERCIAL PRODUCT".**

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## Benefits of the SYSTEM



### FULL COMPLIANCE WITH WORLDWIDE CRITERIA

The BIOEX bioreactor has been designed to fully comply with the organic waste regulations of Turkey, the European Union and other countries. The system and the final products are fully compliant with the relevant legislation.



### RECYCLING AT THE SOURCE AND IN A MORE SMALLER SPACE

Thanks to the system, there are no associated costs such as the need for storage and transport to environmentally harmful waste collection areas or in large-scale recycling facilities.



### USE IN ALL TYPES OF ORGANIC WASTE

In contrast to the well-known compost systems, BIOEX is used to recycle all types of organic waste.



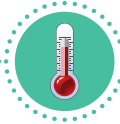
### FERMENTED FEED AND FERTILIZER IN 1 DAY

The fermentation process, which takes place between 3 and 12 months with the conventional method and between 3 and 8 weeks in alternative composting systems with closed chambers, is reduced to 16 to 36 hours thanks to the BIOEX Fast Fermentation System.



### ORGANIC RATIO HIGH QUALITY FINAL PRODUCT

Although the end products obtained from all academic research and field applications have differences depending on the quality of the waste used, it has been observed that they contain a lot of organic matter, as well as humic and fulvic acids, and also increase the water holding capacity of the soil up to 3-4 times.



### HYGIENIC FINAL PRODUCT

In the use of animal waste, hygiene is fully ensured by providing a temperature of 70°C in the last 1 hour of the BIOEX Fast Fermentation System application. The final product is free of harmful pathogens.



### PROTECTING NATURE and HUMAN HEALTH

Disadvantages such as foul odor, accumulation of flammable gas, poisons mixed with water and soil are eliminated. Environment and human health are protected.



### EFFICIENT ENERGY AND USE OF ALTERNATIVE RESOURCES

The energy consumption of the system is efficient and, in addition to electricity, the system can also be switched to energy generated from coal, natural gas and solar collectors if required.



### EASY INSTALLATION, USE and MINIMUM OPERATOR NEEDS

It's convenient to install and use. The entire system works with computer control, it is controlled via the PLC panel. The BIOEX Fast Fermentation System thus minimizes the need for an operator.



Model : Bioex EX 1,500

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## BIOEX ACTIVATOR



### A VERY SPECIAL MIXTURE

The specially developed **BIOEX ACTIVATOR** consists of fermentation **bacteria and enzymes** that are completely **isolated from nature** to **accelerate the thermophilic fermentation process**.



### HEAT SENSITIVE ACTIVATION

The **BIOEX ACTIVATOR** reduces the **fermentation period to one day**, which normally takes 3-12 months, **by activating the fermentative micro-organisms at certain heat levels** provided by the BIOEX Bioreactor.



### PREVENTS OF HARMFUL PATHOGENS

It also plays with its high temperature activity a **role in the elimination of harmful pathogens** that may occur in the final product



BIOEX ACTIVATORS are custom designed for the waste to be fermented and produced according to the dry matter content of the waste:

- Cellulase-based for plant-based waste
- Protease-based for waste of animal origin.

The need for BIOEX ACTIVATOR changes depending on the dry matter and moisture content of the raw material to be used in the system. For detailed information, please see the user manual.

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**ORGANIC FERTILIZER**

**BIOEX ACTIVATOR**

*smart!*

*sensitive!*

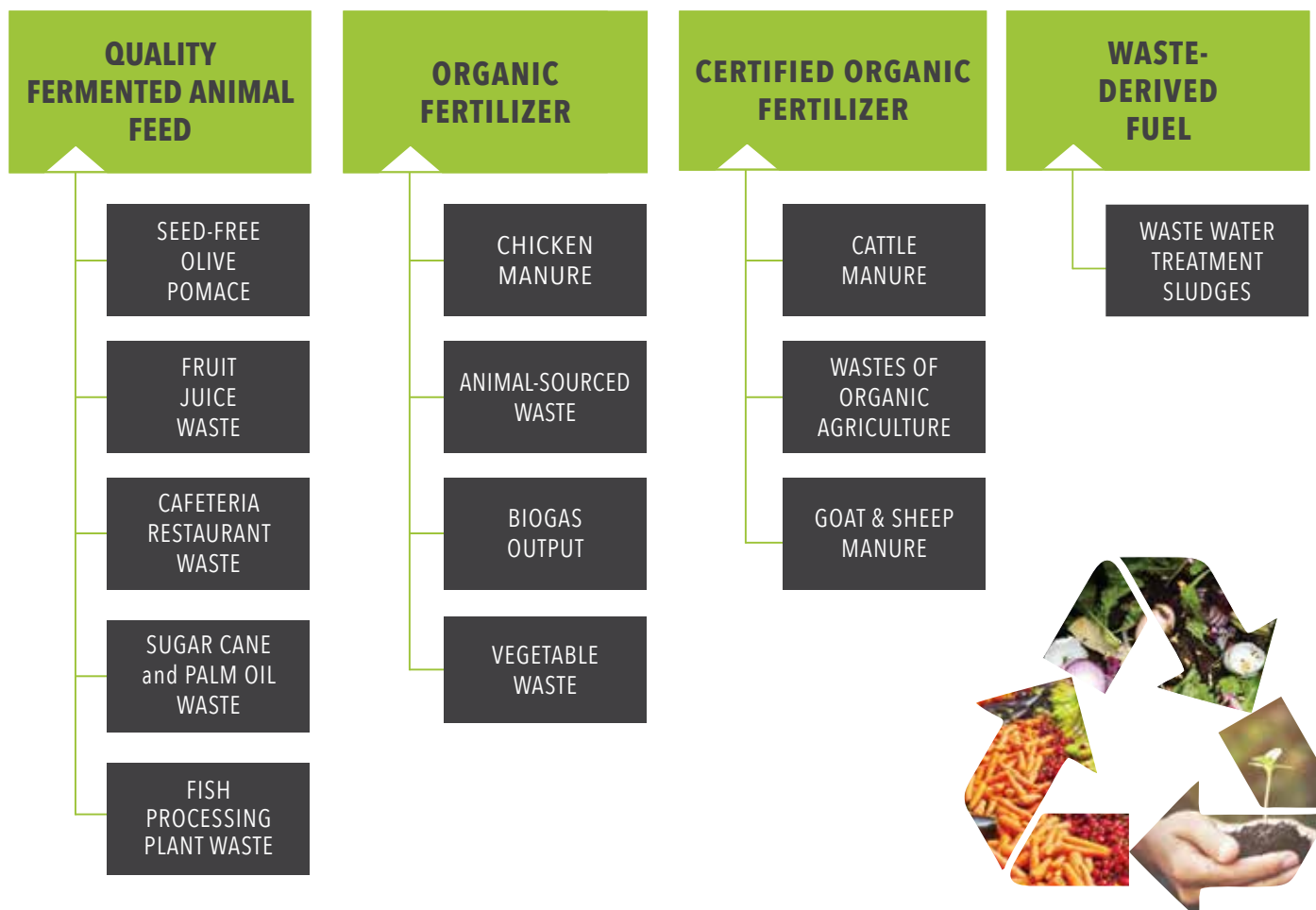
*accelerator!*

## BIOEX Field of Applications

All organic waste such as:

- ✓ Park, garden, green field waste
- ✓ Vegetable by-products (*Olive pomace, fruit pulp, palm oil waste, sugar cane waste, etc.*)
- ✓ Municipal organic waste
- ✓ Mushroom compost facilities' waste
- ✓ Biological hydrolyzate
- ✓ Bio-waste from cafeterias, restaurants, cafes, etc.
- ✓ Wastewater treatment sludges
- ✓ Sugar factory waste
- ✓ Food & feed production plant waste
- ✓ Slaughterhouse waste
- ✓ Tannery organic waste
- ✓ Poultry waste (*Chicken manure and dead animals etc.*)
- ✓ Waste from animal farms
- ✓ Hatchery waste
- ✓ Fish processing plant waste
- ✓ Solid waste from Biogas - Biodiesel - Bioethanol plants

### CLASSIFICATION OF PROCESS OUTPUTS



## BIOEX SYSTEM

### Products info

BIOEX Fast Fermentation Systems can be produced in different volumes according to the requirements.

MODEL	Bioex EX 200	Bioex EX 1,500	Bioex EX 3,000	Bioex EX 22,000
VOLUME	200 liter	1,500 liter	3,000 liter	22,000 liter
CAPACITY <small>(Varies according to the specific weight of the waste.)</small>	80 – 190 kg/DAY	0,5 – 1 Ton/DAY	1,5 – 2,5 Ton/DAY	6 – 20 Ton/DAY
ENGINE POWER	8,0 kW	36,6 kW	41,5 kW	75 kW
AVER. ELECTR. CONSUMPTION	3 kW/h	15 kW/h	25 kW/h	40 kW/h
WORKING SPEED	1-4 RPM	1-4 RPM	1-4 RPM	1-4 RPM
WORKING SYSTEM	otomatic / manual	otomatic / manual	otomatic / manual	otomatic / manual
SHREDDER	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
VENTILATION	✓	✓	✓	✓
TEMPERATURE SENSOR	✓	✓	✓	✓
OPERATING TEMP. RANGE	55-70°C	55-70°C	55-70°C	55-70°C
AUTOMATION SYSTEM	HMI/PLC	HMI/PLC	HMI/PLC	HMI/PLC
SAFETY SYSTEM	✓	✓	✓	✓
INNER LIGHTING	OPTIONAL	OPTIONAL	✓	✓
HYGIEN. PROT. COMPLIANCE	✓	✓	✓	✓
DIMENSIONS <small>(mm - WIDTH x LENGTH x HEIGHT)</small>	600 x 1400 x 1050	1805 x 4430 x 2300	1995 x 5180 x 2650	4529 x 7367 x 4715

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**BIOEX®**

**YOUR BIOEX  
PARTNER:**

**REPRESENTATIVES IN:**

**SPAIN • BELGIUM • NETHERLANDS • LUXEMBOURG • GERMANY • ITALY • PORTUGAL • MOROCCO • RUSSIA**

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