



**DEDISA SA,
Enterprise of Integrated Solid Waste
management of Chania Regional unit, Greece
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DEDISA SA (OTA)

“Comparative assessment of the qualitative characteristics of the produced compost from the separate collection of biowaste and of the soil improver from the organic fraction of mixed waste.”



Kouroupitos Gorge 1960-1999



For a long period of time
Greece was paying a
fine to the EU of
20.000,00
euros/daily for the
uncontrollable
disposal of waste
and related
environmental
contamination.

Mesomouri (intermediate location) 2000-2004



Temporary solution:
The packaging of
MSW and their burial,
until the new plant
was built.



Remediation of the dumpsite and development of the MBT- Sanitary landfill of Chania





Personnel:

The personnel of DEDISA numbers approximately 350 employees, with 10% scientific personnel.



Fleet:

- 16 trucks are for the withdrawal of the M.S.W.
- 20 trucks to collect the recyclables (6 e-trucks),
- 7 trucks for the collection of the Bulky Materials,
- 1 truck for the Glass.



Enterprise of Intergrated Solid Waste Management S.A.



Permanent residents: 157.000
Residents during the summer months: >220.000



DEDISA ACTIVITIES

MSW collection, sorting at source recyclables, collection of recyclables, treatment & disposal of waste and recyclables

► Sorting at Source:

1. Blue bin (paper, plastic, aluminum, metals)
2. Yellow bin (Glass)
3. Brown bin (biowaste)
4. Red bin (textiles, shoes)
5. Bulky wastes
6. Green Wastes
7. Electric and Electronic Equipment
8. Door-to Door (only for the residents of old town of Chania)

► Collection of MSW with the collaboration of the municipality of Chania & Platanias

► Processing of MSW

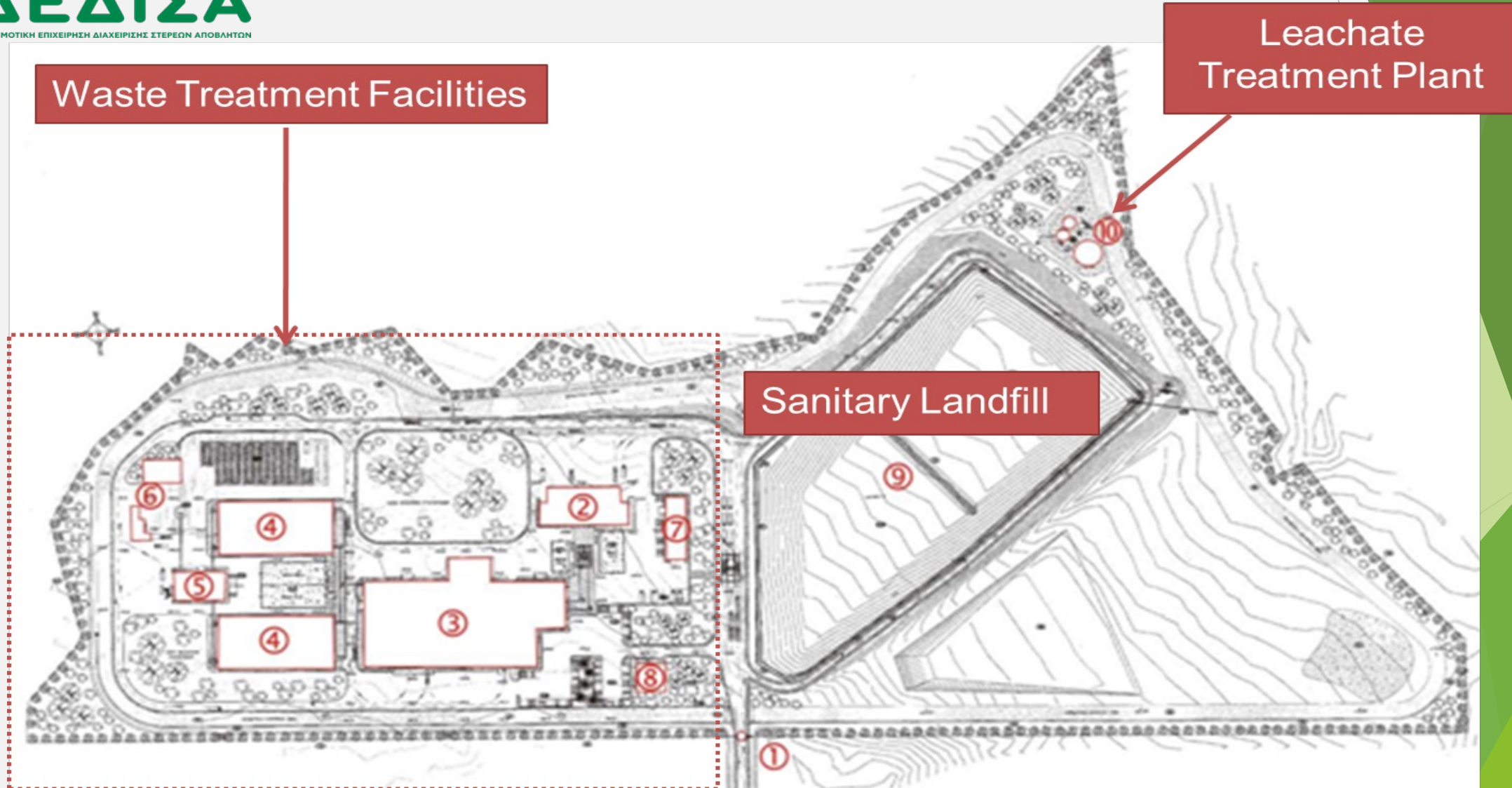
► Recovery of materials

1. Recycling

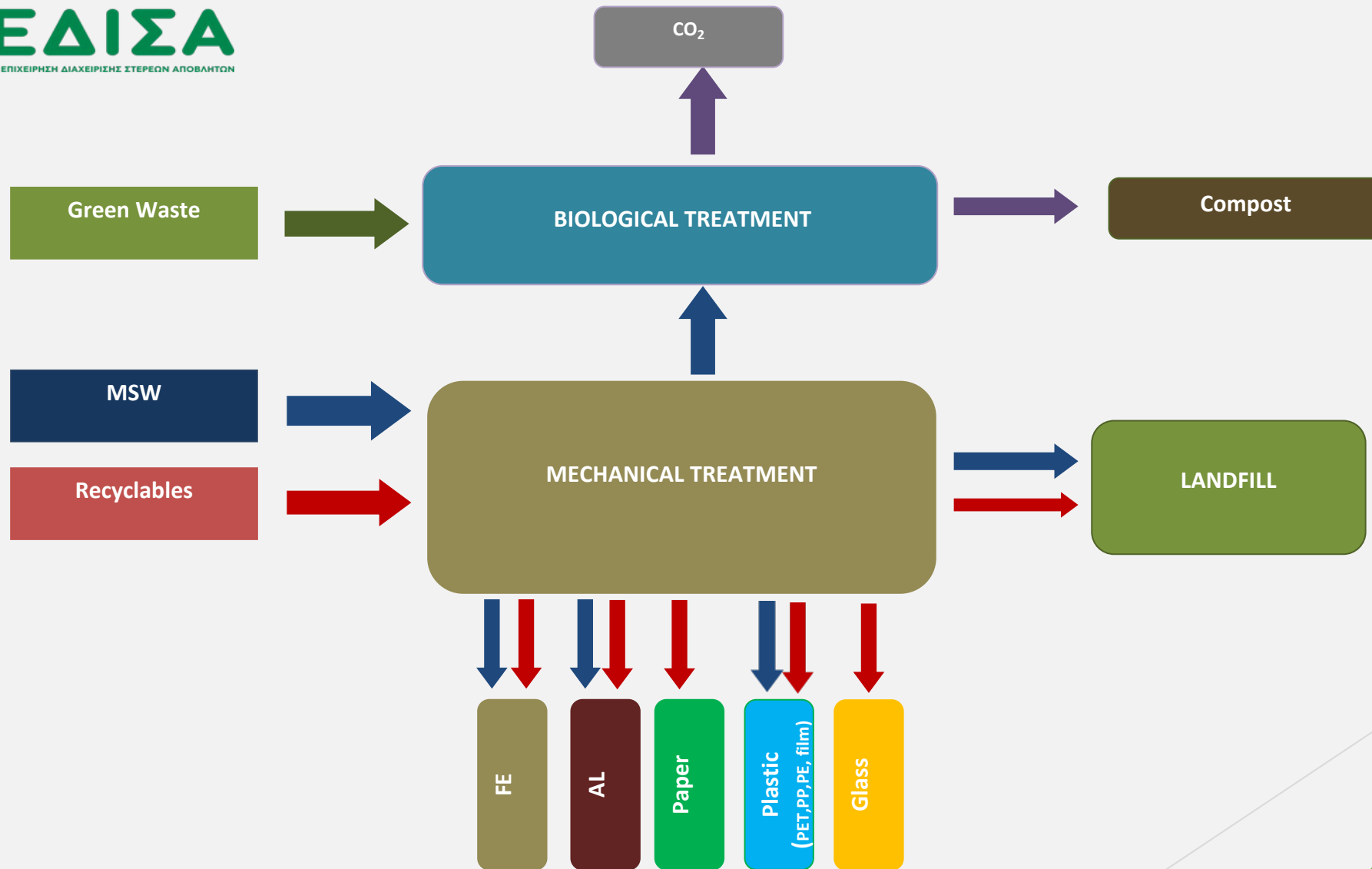
2. Composting

► Information campaigns and citizens' awareness about the best practices of waste management

General Layout



Mass-Flow Diagram of MBT



Processing of Mixed Solid Waste



Quantity of MSW
that was
processed for the
year 2022:
≈84.000 tones

Recyclables materials-Blue Bin



Quantity of collected recyclable materials: 17.750 tones for the year 2022.



Optical and Ballistic Separators- Robotic Separators



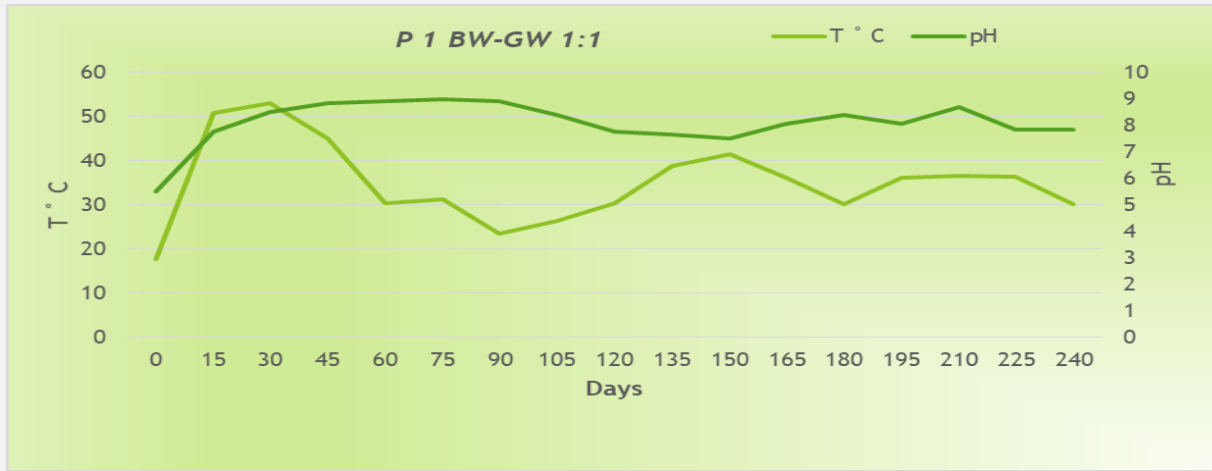
Methodology

Biowaste + Green Waste : Turned windrows composting (1:1) P1

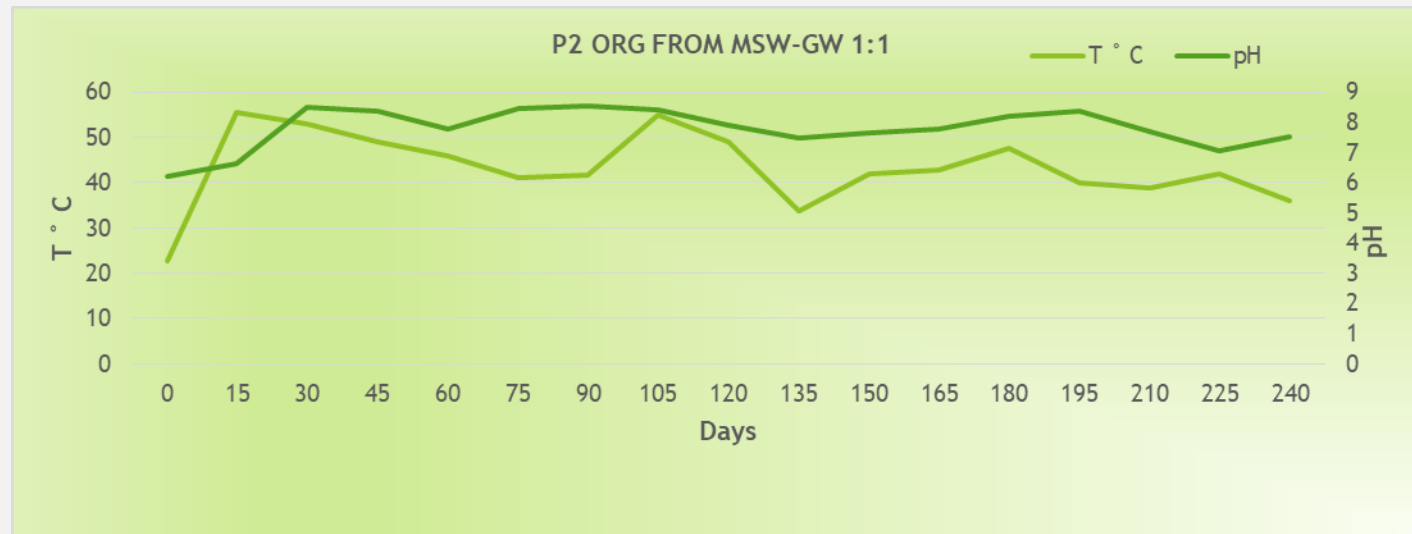
OFMSW + Green Waste: Turned windrows composting (1:1) P2

- Windrow composting is considered as a dynamic, low cost but extensive system.
- The frequent turning promotes uniform decomposition as the cooler outer layer of the matrix is moved inside the mass where the material is exposed to high temperatures and intensive microbial activity.

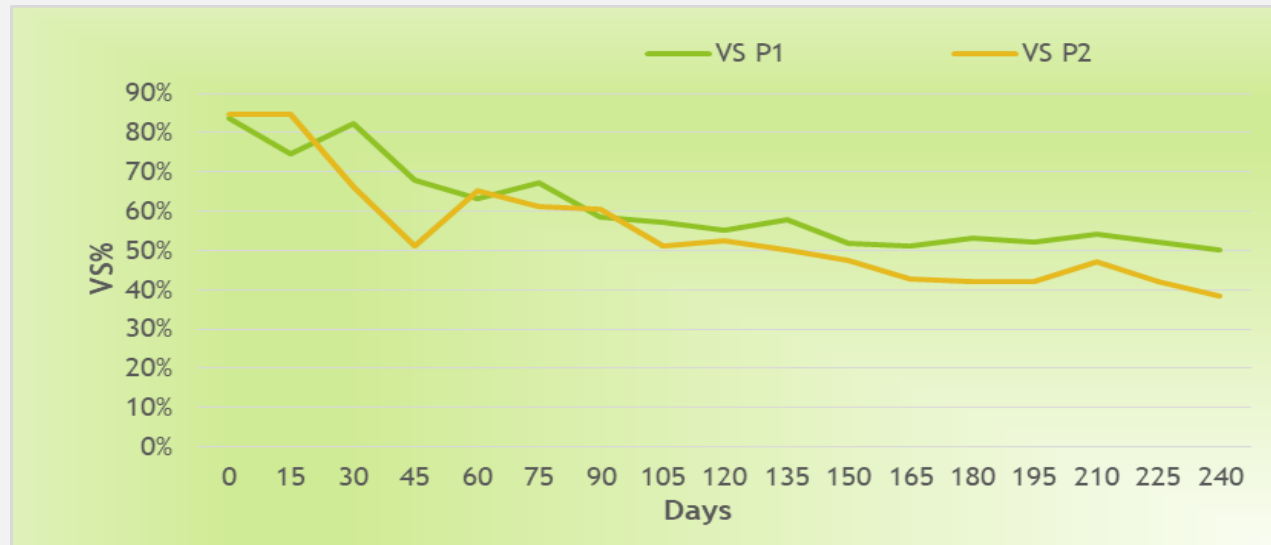
Qualitative characteristics



Similar properties and composting process evolution



Qualitative characteristics



Qualitative characteristics



C/N ratio indicate the maturity of the material:

<17 (Moldes et al., 2007)

<12 (Bernal et al., 1998)

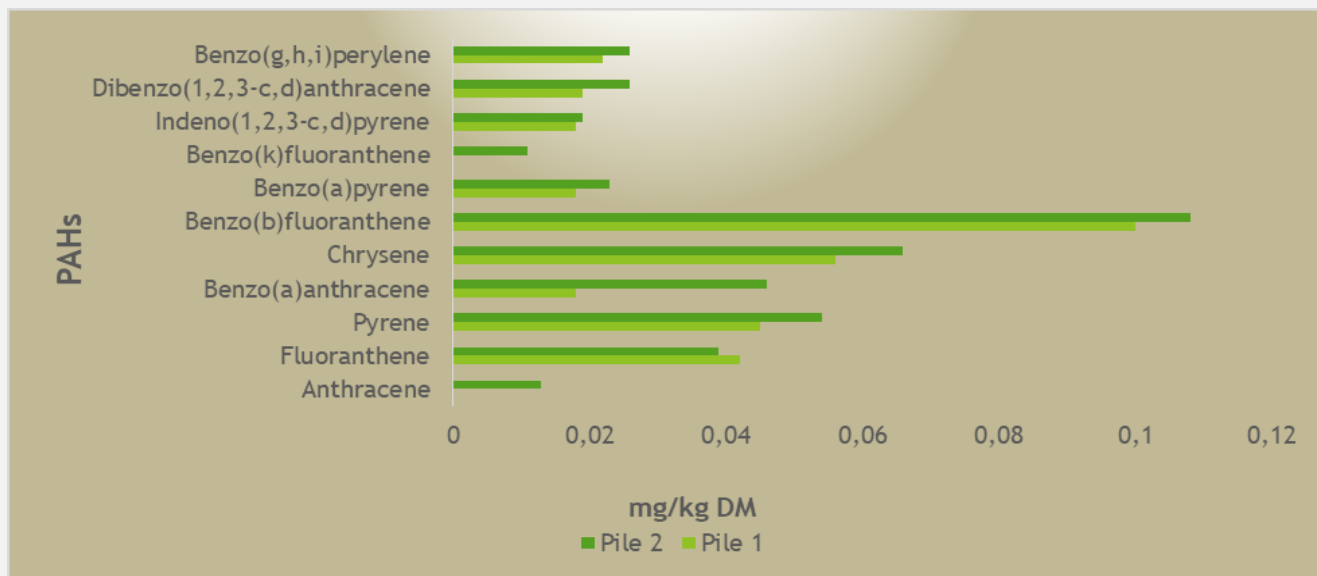
around 15-16 (Barral et al., 2007), between

15 and 20 (Rosen et al., 1993)

Qualitative characteristics



Qualitative characteristics



Sum of PAHs P1=0,338

Sum of PAHs P2=0,431

Parameters	Pile 1	Pile 2
PCB 28	<RL	<RL
PCB 52	<RL	<RL
PCB 101	<RL	<RL
PCB 118	<RL	<RL
PCB 138	<RL	<RL
PCB 153	<RL	<RL
PCB 180	<RL	<RL
2,5-Dichloro PCT	<RL	<RL
2,4,6-Trichloro PCT	<RL	<RL
2,3,5,6-Tetrachloro PCT	<RL	<RL
2,3,4,5,6- Pentachloro PCT	<RL	<RL

Content of pathogens for both piles

Salmonella spp: Absence

Conclusion

1. There are no substantial differences in the performance of the process for the different mixtures.
2. There is no need to further increase the fraction of green waste in the mixture, which can facilitate the operational design of a full-scale facility, as green wastes are not abundant in the area and have to travel long distances to the facility.
3. The regional Unity of Chania is purely a tourist area with no hazardous waste production industry that could potentially be discarded in mixed waste.
4. The excellent operation of the “Separation at source” of small and large batteries, lamps etc, resulting in the absence of high concentrations of heavy metals in the mixed waste.



*“To leave the world better than you found it,
sometimes you have to pick up other people’s trash.” —
Bill Nye*

**Thank you very much for your
attention!**