



Development and Engineering of Biotechnological Processes for Waste Valorization

Development of Biotechnological Waste Valorization Processes, producing added value bioproducts, from laboratory scale to industrial implementation.

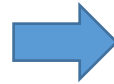
- 🌀 **Laboratories.**
- 🌀 **Semi-industrial Demo Plant of 25 t/d capacity.**
- 🌀 **Process engineering and development of industrial projects with own patents.**
- 🌀 **Highly qualified multidisciplinary team.**
- 🌀 **More than 15 years of experience in development and scaling of biotechnological processes from organic waste.**



Demonstration activities at PERSEO Biorefinery

Demonstrate a global process for the production of bioethanol as liquid biofuel from OFMSW, biogas from the remaining recoverable organic fraction and organic fertiliser, integrated as an urban biorefinery.

Separately collected OFMSW



By-product



Biogas



Digestate

Bio-based fertiliser

Bioethanol

Other partners:

Physical-chemical parameters	Value	SD
pH	7,49	0,12
Conductivity, dS/m	20,09	1,57
Na, %	6,49	0,15
TS, %	5,59	0,46
VS, %	74,55	1,32
Total Carbon, %	40,26	4,13
TOC, %	38,04	0,98
Water soluble C (% TOC)	34,00	7,07
Nutritional parameters		
Total N, % db	3,83	0,24
Water Soluble N, %db	3,83	0,24
N-NH ₄ ⁺ , % soluble N	0,56	0,02
N-nitrate, %soluble N	0,01	0,00
Macronutrients		
P, %	0,52	0,00
available P, %	0,32	0,05
K, %	1,95	0,11
available K, %	1,85	0,07
S, %	0,44	0,04
Ca, %	2,59	0,13
Mg, %	0,27	0,01
Micronutrients mg/Kg		
B	73,95	8,41
Fe	2088,82	148,44
Mn	54,69	5,21
Mo	3,92	0,40
Co	0,48	0,05

- ✓ The W2B digestate is potentially usable in agriculture as organic fertilizer.
- ✓ It contains a certain amount of N and other macronutrients (K, P, Ca, S, Mg) and micronutrients (Fe, Mn, B).
- ✓ There is no risk of pathogens nor heavy metals.
- ✓ The digestate did not show inhibitory effect (phytotoxicity assays) but had a stimulant result on plant growth.
- ✓ The digestate could be used as N fertiliser along with irrigation water or subjected to a a drying process for storage and transport.



www.waste2bio.com