

CO-COMPOSTING AS A TECHNOLOGY FOR THE VALORIZATION OF DREDGED SEDIMENTS AND GREEN WASTE: CZECH EXPERIENCE



“LIFE AGRISED LIFE17 ENV/IT/000269”

C. MACCI^{1*}, E. PERUZZI¹, S. DONI¹, F. VANNUCCHI¹, R. SCODELLINI², A. CINCINELLI², F.P. NICESE³, L. AZZINI³, K. WASKA⁴, M. HERMANKOVA⁴, S. LUCCHETTI⁵, G. MASCIANDARO¹

¹CNR-IRET, via Moruzzi 1, 56124, Pisa, Italy

²Department of Chemistry “Ugo Schiff”, University of Florence, Via della Lastruccia 3, 50019, Sesto Fiorentino, Italy

³University of Florence, DAGRI, Viale delle Idee 30, 50019, Sesto Fiorentino, Italy

⁴EPS biotechnology s.r.o., V Pastouškách 205, 686 04, Kunovice, Czech Republic

⁵Agri Vivai s.r.l. Via Vecchia Casalina, 118/G, 51100 Pistoia, Italia

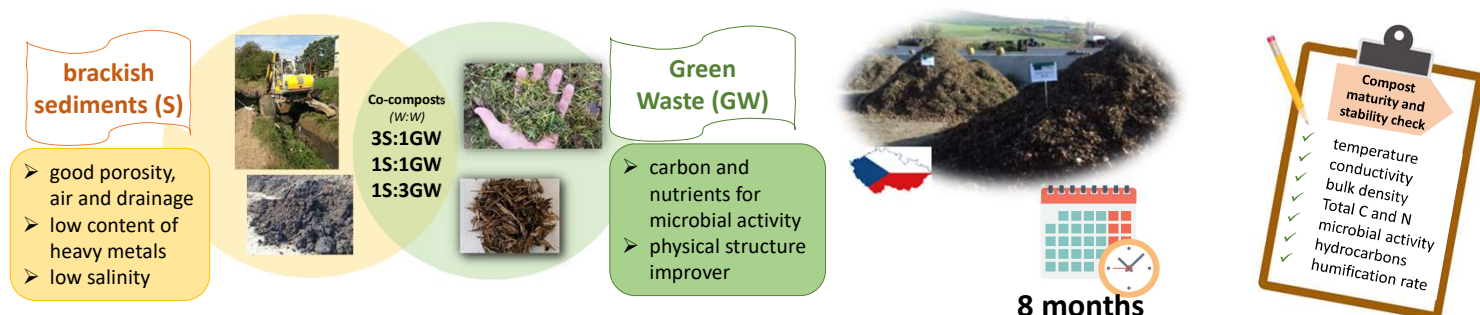
*E-mail: cristina.macci@cnr.it

Introduction

About 1 and 13 million tons of dredged river **sediments** and **wood pruning** residues, respectively, are produced annually in Europe. The presence of high concentrations of contaminants in river sediments and the variable composition of pruning residues limits their applications, increasing the landfill disposal.

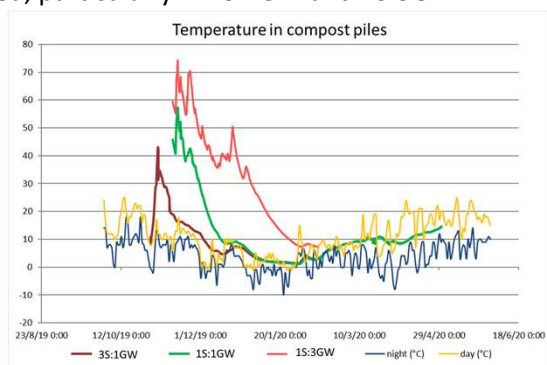
The **AGRI SED project** aims to demonstrate the suitability of dredged sediments **co-composted** with green waste to produce an innovative **growing media** for plant nursery and **technosoils** for degraded soil rehabilitation.

Co-composting process



Results

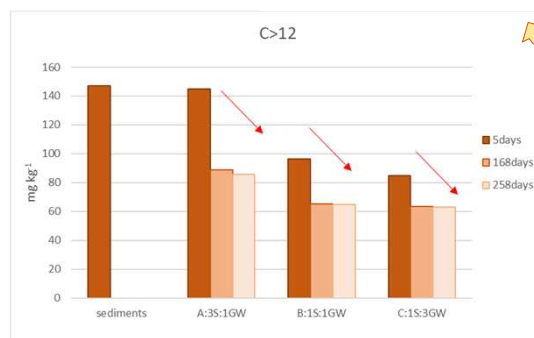
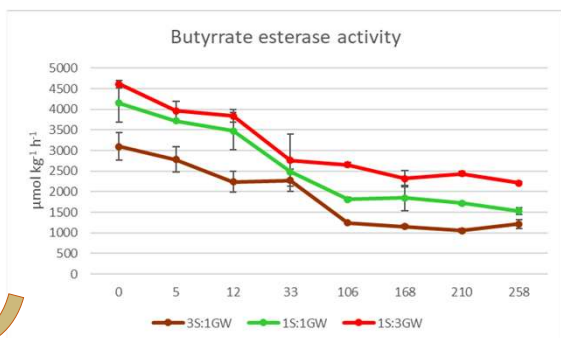
Thermophilic phase was above 40 °C in all piles and the recommended temperature (> 55°C) for **material sterilization** was reached, particularly in 1S:1GW and 1S:3GW.



	3S:1GW	1S:1GW	1S:3GW
Humification ratio	% 69.2	86.1	65.4
Germination index	% 124 ± 9	117 ± 4	108 ± 13
Conductivity	dS/m 0.86 ± 0.02	0.78 ± 0.03	0.75 ± 0.02
Total organic carbon	% 3.02 ± 0.27	3.04 ± 0.15	5.04 ± 0.27
Total nitrogen	% 0.26 ± 0.02	0.31 ± 0.02	0.50 ± 0.02
C/N	% 11.61	9.8	10.1

The **maturity** of composts was reached through the production of final products rich of **humic substances** and **without harmful salt content**. The **germination index**, higher than 60%, and the reduction of **hydrocarbons (C >12)** indicated the **absence of toxic elements**.

Total microbial activity, indicated by **butyrate esterase**, decreased over time in all co-composts, suggesting the **stability** of composts.



Conclusion

The **AGRI SED project** demonstrated the **suitability** of the dredged sediments to be co-composted with pruning residues, providing a strategy for its management in **circular economy** perspective.

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