



BBioNets
Boosting the adoption
of Bio-Based Technologies

Cross-Fertilisation Meetings

Bio-Based Practices on Farms & Forests

“Innovations in Nutrient Recovery”

Short Value Chains: Turning Circular By-products into Biofertilizers

Luca Brenna – Tersan Puglia

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Tersan – History, Vision & mission



1974: TERSAN PUGLIA IS FOUNDED, THE FIRST PLANT IN ITALY DEDICATED TO RECOVERING ORGANIC WASTE TO PRODUCE BIOFERTILIZERS.



NOURISHING THE EARTH, TO CARE FOR THE ENVIRONMENT.



DEVELOPING INNOVATIVE SOLUTIONS WITH LOW ENERGY AND ENVIRONMENTAL IMPACT, TO PROMOTE INCREASINGLY SUSTAINABLE AGRICULTURE AND AN INCREASINGLY LIVEABLE WORLD.

Tersan – Plants and support structures

Our facilities for studying, testing, and producing a unique BIOFERTILIZER



FACTORY

**R&D
LABORATORY**

**EXPERIMENTAL
GREENHOUSES**

**EXPERIMENTAL
FIELDS**



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BioVegetal - The "philosophy" behind our biofertilizer

Organic matter



High fulvic and humic acid content (>20%)

Balanced carbon/nitrogen ratio (C/N=15)

Microorganisms



BACILLUS
(10⁷ ufc per gr/pdt)

Apporta il beneficio di produzione di precursori di fitormoni e solubilizzazione di fosfati



MICORRIZE
(10⁵ ufc per gr/pdt)

Rafforza l'apparato radicale della pianta garantendo un assorbimento più efficiente dei nutrienti



TRICODERMA
(10⁷ ufc per gr/pdt)

PGP: Fungo promotore della crescita delle piante



PSEUDOMONAS
(10⁷ ufc per gr/pdt)

Apporta il beneficio di produzione di precursori di fitormoni e solubilizzazione di fosfati

Selected mix of over 200 different types of microorganisms, over 10 billion microorganisms per gram of product



The perfect combination of rich, stable organic matter and microorganisms (fungi and bacteria) make BioVegetal a unique fertilizer, ideal for increasing the biological fertility of the soil



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BioVegetal - Chemical-physical and microbiological profile

Organic carbon	30
Organic nitrogen N	2
Phosphorus P2O5	2
Potassium K	2
Humic and fulvic acids	20
Sulfur	2
pH	7.5
EC	1.5 dS/m
Copper	0.02
Manganese	0.01
Iron	0.05
Zinc	0.05
Boron	0.05
Prevailing bacteria:	Bacillus - Pseudomonas
Prevalent fungus	Trichoderma - Mycorrhiza

The origin of the raw materials (humid waste, pruning clips, and byproducts from food manufacturers) characterizes Bio Vegetal in several fundamental ways:

- **Low sodium chloride content**, which is abundant in organic fertilizers of animal origin.
- **High percentage of organic compounds, such as glycine betaine.** Empirical evidence and scientific research have confirmed that these compounds make plants more resistant to environmental stress (salinity, drought, and extreme temperatures).
- **High fulvic and humic acid content**
- Balanced carbon/nitrogen ratio (C/N=15), which characterizes the stable fraction of soil organic matter (humus)





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BioVegetal – Direct and indirect benefits...

BioVegetal biofertilizer, through **the addition of over 200 types of microorganisms**, increases the **biological fertility of the soil** and thus generates a triple effect of Plant Growth Promotion (PGP), induction of resistance to abiotic stress, and induction of resistance to biotic stress.

SOIL



Improved soil biodiversity

Enrichment of the soil microbiome, better management of extreme weather events and pathogens

ENVIRONMENT



Improved carbon footprint thanks to high stable carbon content and reduced use of mineral fertilizers.

CO2 soil stock (CARBON FARMING), production of CARBON CREDITS

FOOD



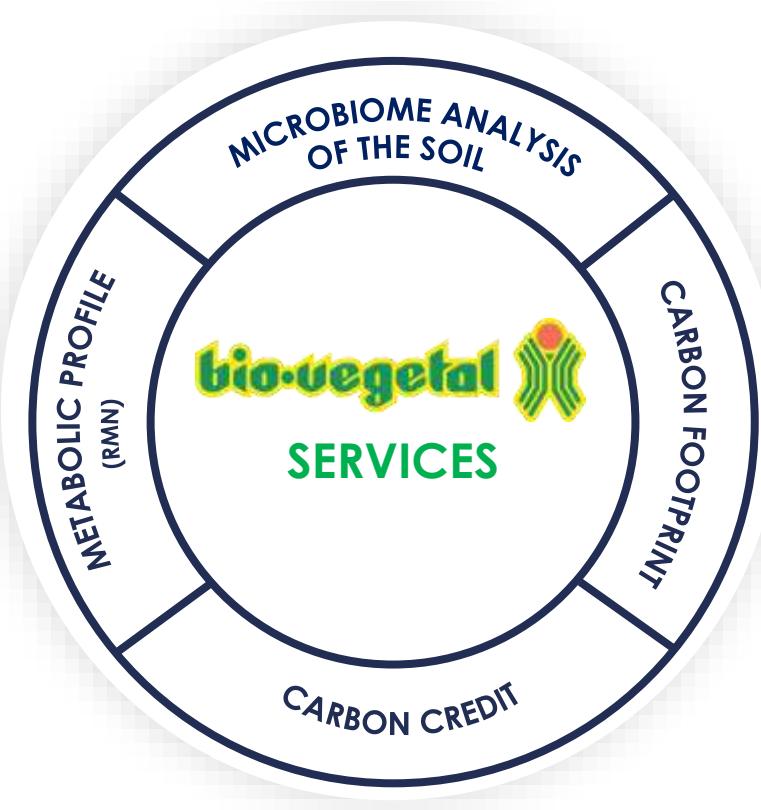
Better Production Quality

Nutritional and metabolomic profile, organoleptic qualities, shelf life



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BioVegetal – The service portfolio



OBJECTIVES

OBJECTIVIZING THE INDIRECT BENEFITS
OF BIOVEGETAL

MEETING THE NEW NEEDS
OF CUSTOMERS TO GIVE THEM VALUE

BioVegetal – Direct and indirect benefits, and how they are measured

BioVegetal biofertilizer, through the addition of over 200 types of microorganisms, increases the biological fertility of the soil and thus generates a triple effect of Plant Growth Promotion (PGP), induction of resistance to abiotic stress, and induction of resistance to biotic stress.

SOIL



Improved Soil Biodiversity

Enrichment of the soil microbiome, better management of extreme weather events and pathogens

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CO₂ soil stock (CARBON FARMING), CARBON CREDITS production

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Tersan & BioVegetal – Our approach

What is the real challenge?

Incorporating "circularity" into companies' existing business models,
minimizing the impact on:





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Tersan & BioVegetal – The circular supply chain model

SCOPE OF REFERENCE: PLAYERS IN THE AGRO-INDUSTRIAL SECTOR

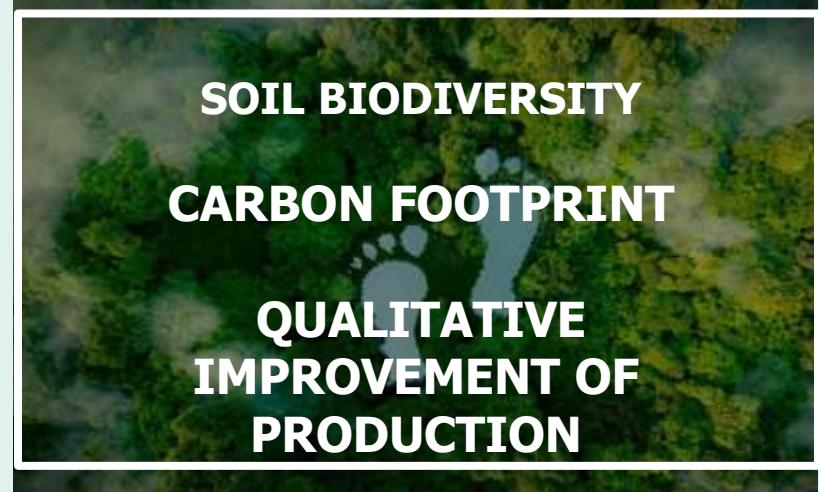
INPUT

BYPRODUCT OF THE INDUSTRIAL PROCESS OF THE PLAYER

OUTPUT



PRODUCT



SERVICES

Circular Die Heads – Assoproli Case History

RECOVERY
PRODUCTION WASTE
FROM ASSOPROLI OIL MILLS
(olive leaves)



PRODUCTION
BIOFERTILIZER
FROM THEIR WASTE



QUANTIFICATION
CARBON FOOTPRINT
and CARBON FARMING

GENERATION
CARBON CREDITS



Circular Die Heads – Assoproli Case History

From the collaboration between Assoproli and Tersan a specific biofertilizer for olive trees under the **BioVegetal & Assoproli** brand.

The leaves of olive trees, a by-product of Assoproli oil mills, thus become a raw material for producing this biofertilizer!



RAI3-TGR PUGLIA

[Click here to watch the video](#)

https://bari.repubblica.it/cronaca/2025/05/21/news/tersan_punta_all_hi-tech_dagli_scarti_dell_olio_nasce_il_biofertilizzante_filiera_100_circolare_424521560/#:~:text=Tersan%20Puglia%20can%20boast%20a,in%20collaboration%20with%20Assoproli%20Bari

REPUBBLICA

AGRICOLTURA.IT

[Circular supply chains: from olive farming waste to biofertilizers](#)





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Circular Extruders – Case History Andriani (Gluten-free pasta)

WASTE RECOVERY
FROM
PRODUCTION
(slurry hoppers and
production tailings)



PRODUCTION
BIOFERTILIZER



WATER FOOTPRINT,
CARBON FOOTPRINT
& CARBON FARMING
QUANTIFICATION

(quantification and certification for
Andriani's Sustainability Report
and Felicia brand
storytelling)



METABOLIC ANALYSIS
OF THE NUTRITIONAL
PROFILE OF PASTA

(focus on proteins,
fats and vitamins B1
and B2)



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DEL SALENTO

Circular Supply Chains – Our Partners

CURRENT PROJECTS

MARKET	COMPANY	BYPRODUCT TO BE VALORIZED
Grapes Wine	CANTELE <i>Varvaglione</i> VIGLIONE POLVANERA	Stems and Pomace
Olive Oil	MURAGLIA ASSOPROLIT Pantaleo	Leaves from Oil Mills
Fresh	MARCHIATO fresco ITALY Sempre Verde	Processing waste Fresh fruit and vegetables
Pasta Gluten Free	ANDRIANI felicia	"Mash" from the hoppers

Thank you!

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