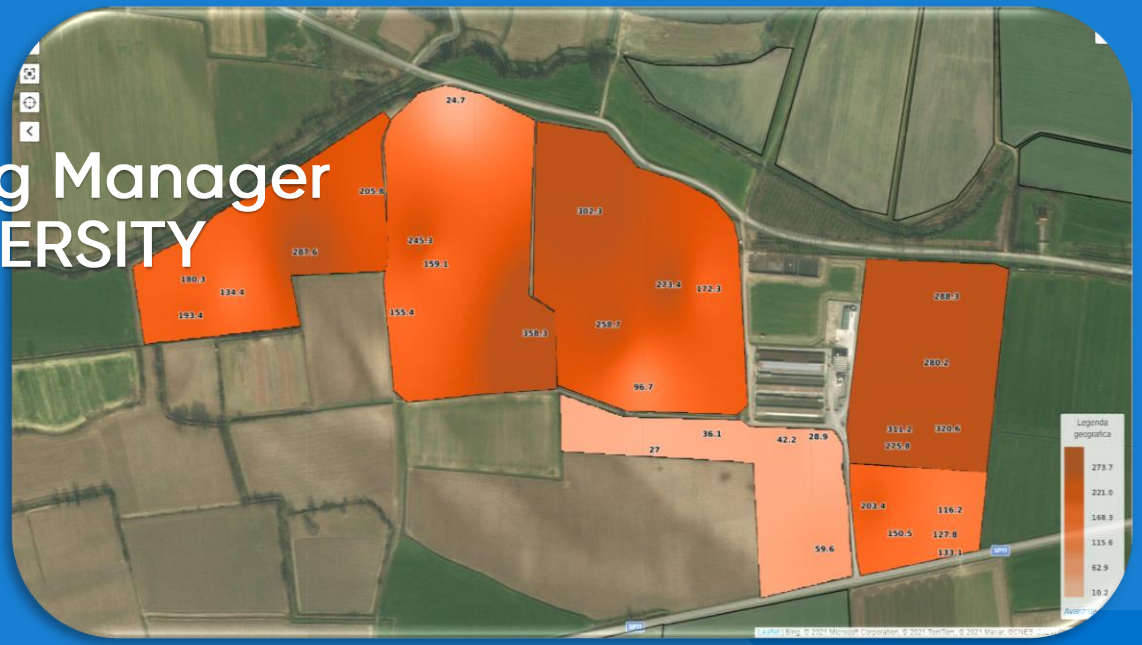
CORTEVA SOIL SERVICES

Matteo Piombino – Customer Marketing Manager
October 20th JRC – Forum SOIL BIODIVERSITY



CORTEVA™

agriscience

Merger in 2017

Business Highlights

~14.2B	$2.1B	~21K	100+	65+	~140	~100	150+	10M+
2020 Global Net Sales	2020 Global Operating EBITDA[1]	Employees	Crops	Active Ingredients	Countries	Production and Mfg. Facilities	R&D Facilities	Customers

PIONEER®
A DUPONT COMPANY

Founded in 1926

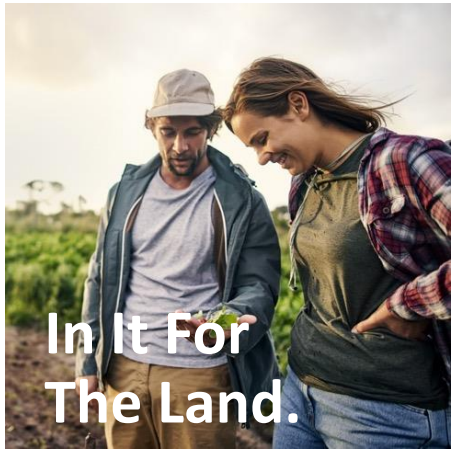
DOW

Founded in 1897

DUPONT™

Founded in 1802

OUR 2030 COMMITMENTS TO SUSTAINABILITY



In It for Farmers focuses on enriching the lives of people at the heart of our food system. Our 10-year commitment includes providing tools and training for farmers to improve their livelihoods and operations, while conserving resources and sustaining the land.

- Provide farmer training
- Enrich smallholder livelihoods
- Enable farming resilience

In It for the Land zeroes in on protecting the land, crop yields, and the long-term success of the agriculture industry.

- Improve on-farm soil health
- Advance on-farm water stewardship
- Enhance biodiversity

In It for Our Communities is dedicated to uplifting and protecting people throughout the food system and the broader agriculture community.

- Protect health and safety
- Engage with communities
- Volunteer our time
- Increase supply chain transparency

In It for Our Operations focuses on increasing sustainability in our own operations and in the solutions we provide to farmers.

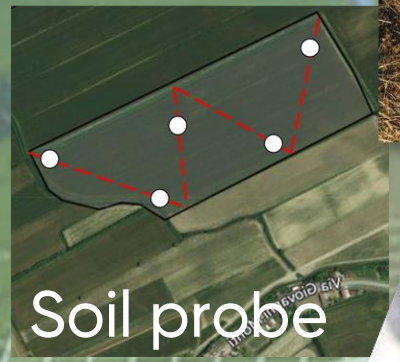
- Innovate sustainably
- Reduce our GHG emissions
- Use reusable and recyclable packaging
- Operate sustainably

https://www.youtube.com/watch?v=QspoAe8qa_8&list=PLJH446RiTipZ88l4VuvaJh0bxZRhvXejW&index=2

Sampling Process

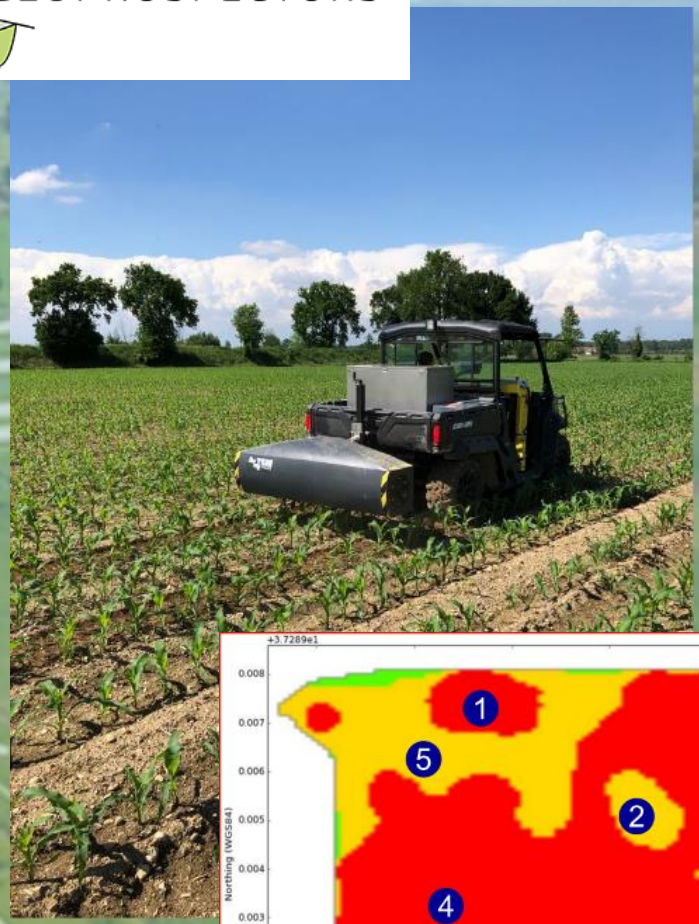
GEOPROSPECTORS

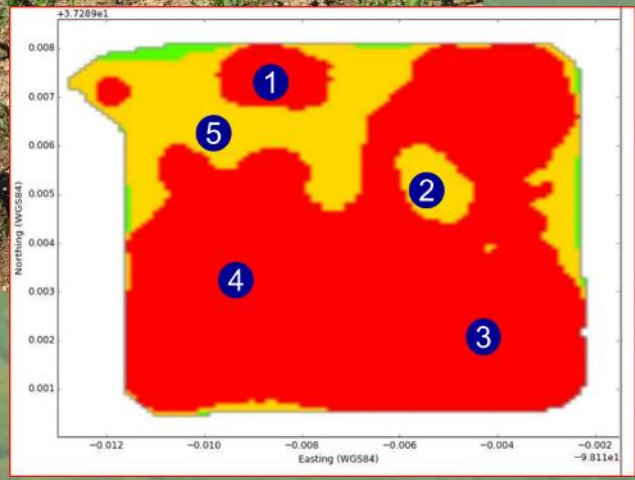
Standard Approach



Soil probe

Precision Approach by Grid

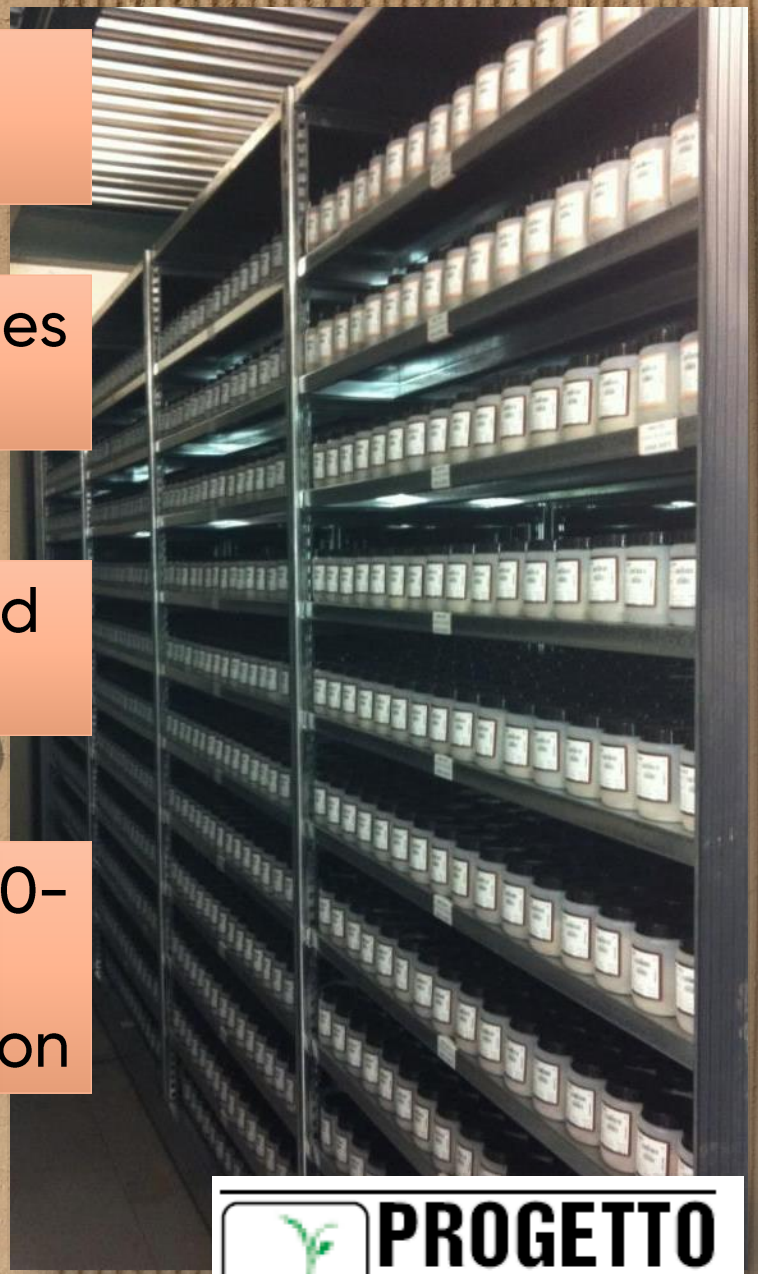




PROGETTO TERRENO

SOIL PROCESS

- Soil Samples
- Sample preparation: sieving at 2 mm
- Wet chemistry for P and K and cations
- NIR scanning on 2 mm samples and prediction of the parameters
- Aggregation of the data
- Delivery of the report



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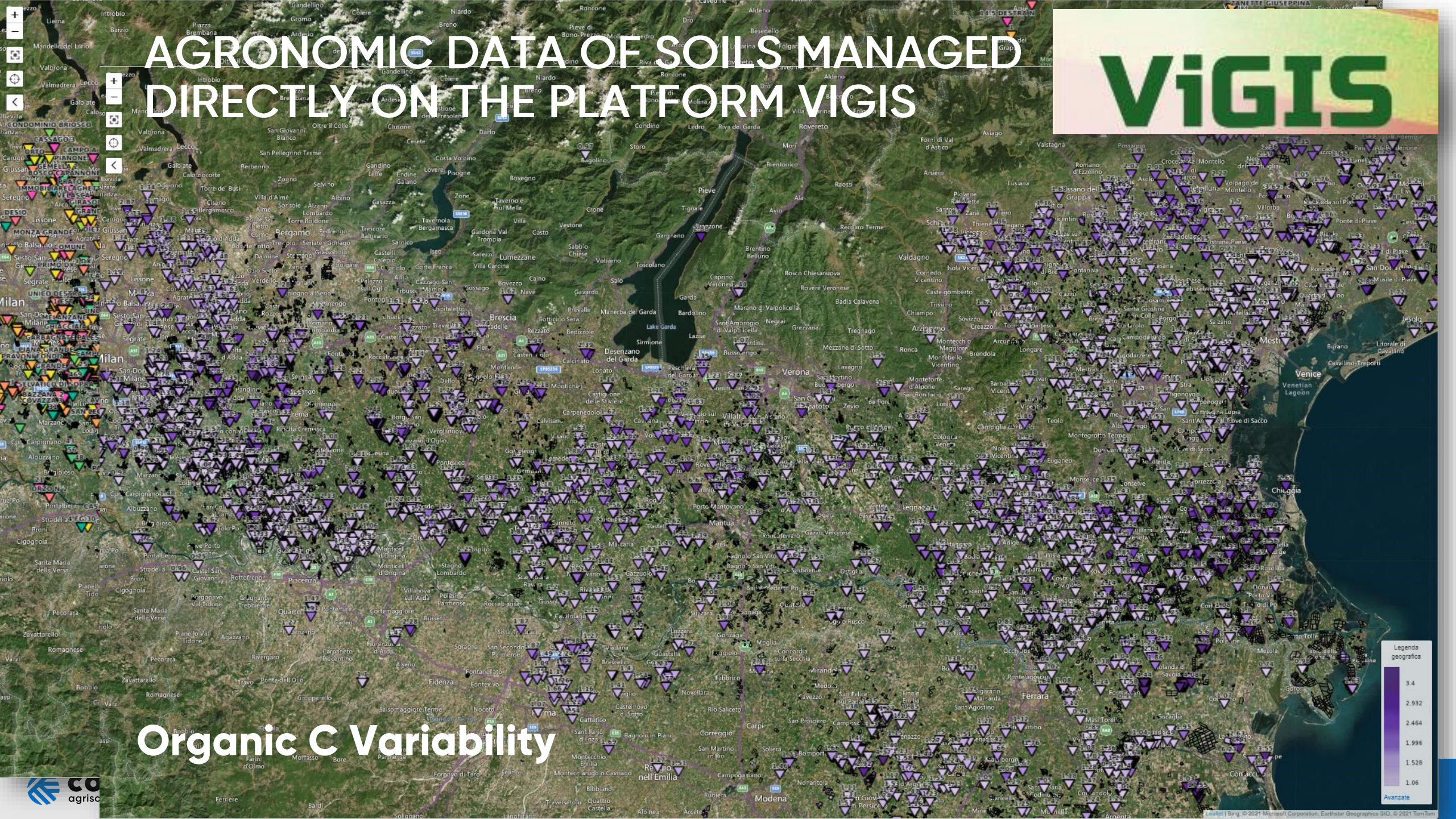
PROGETTO TERRENO

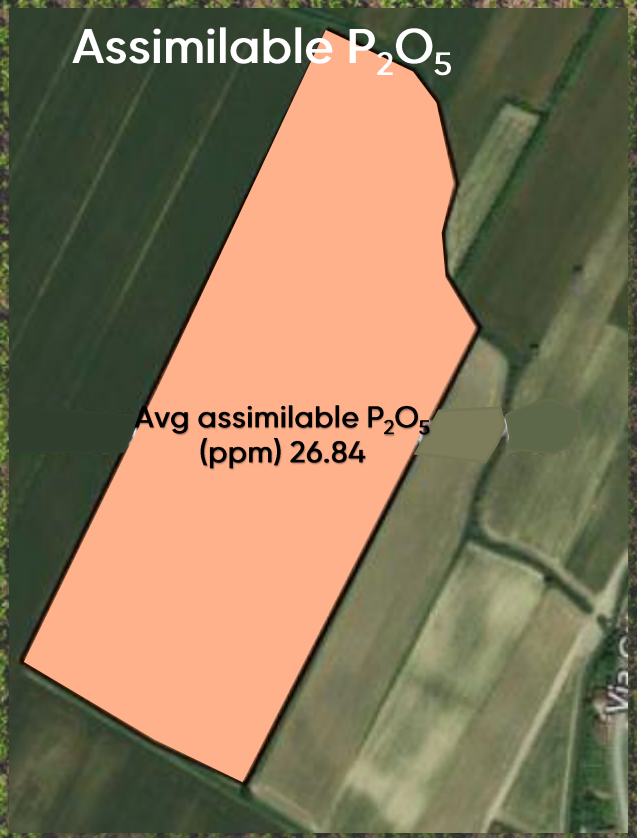
AGRONOMIC DATA OF SOILS MANAGED DIRECTLY ON THE PLATFORM VIGIS

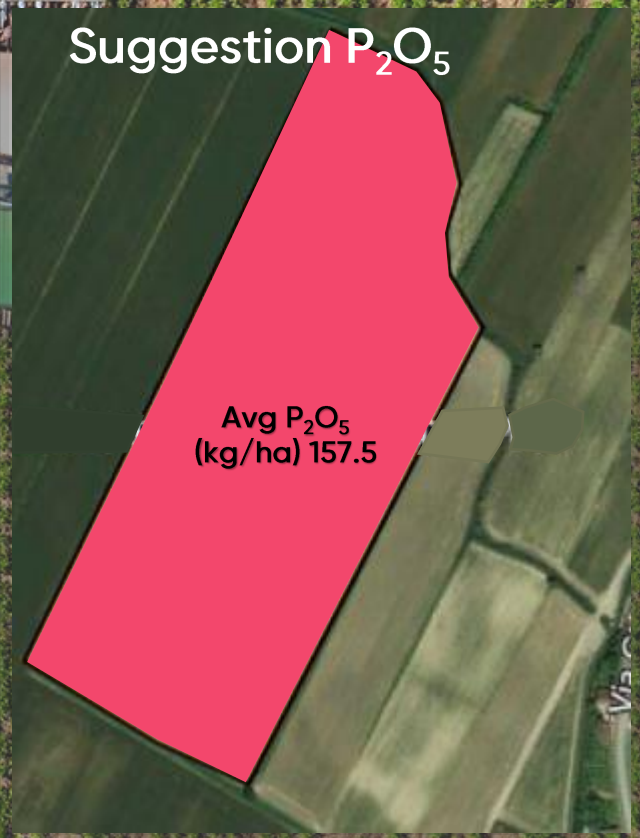
ViGIS

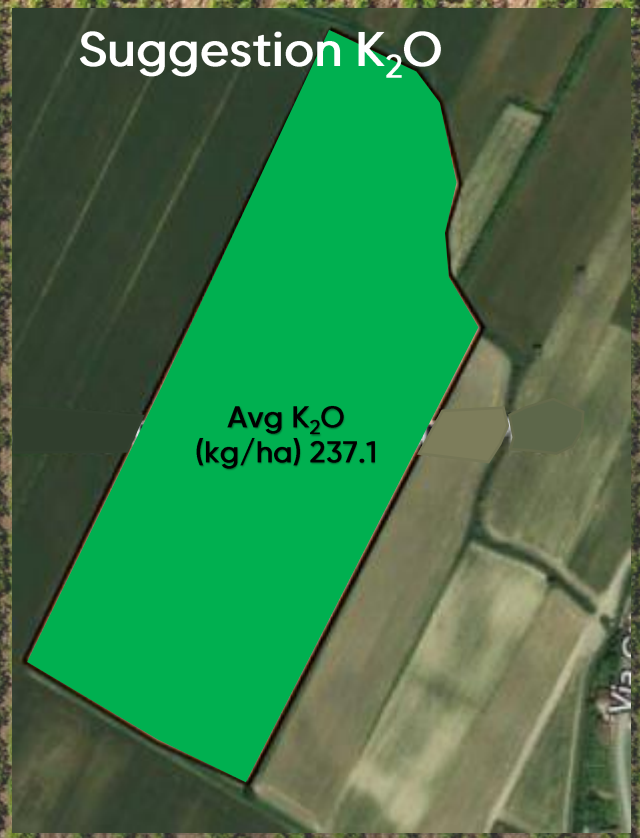


Organic C Variability

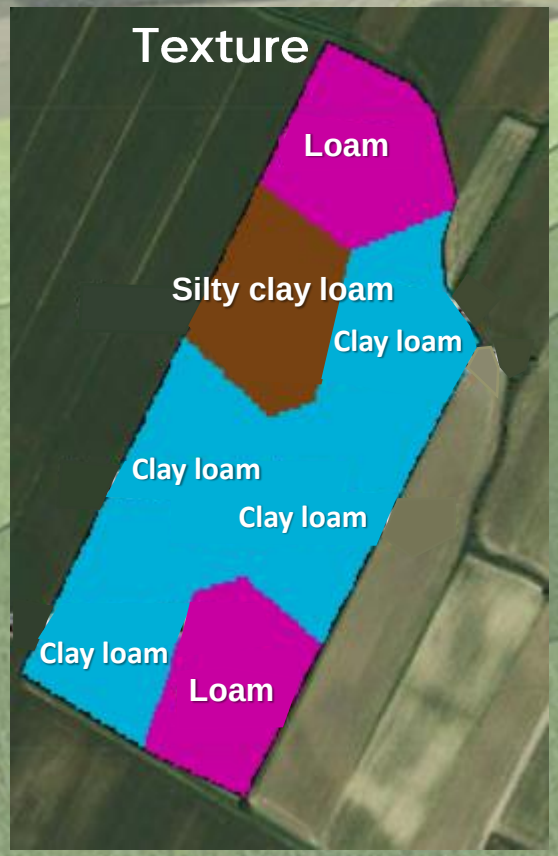
Field level – Average parameters and fertilization suggestions (1 sample/field)

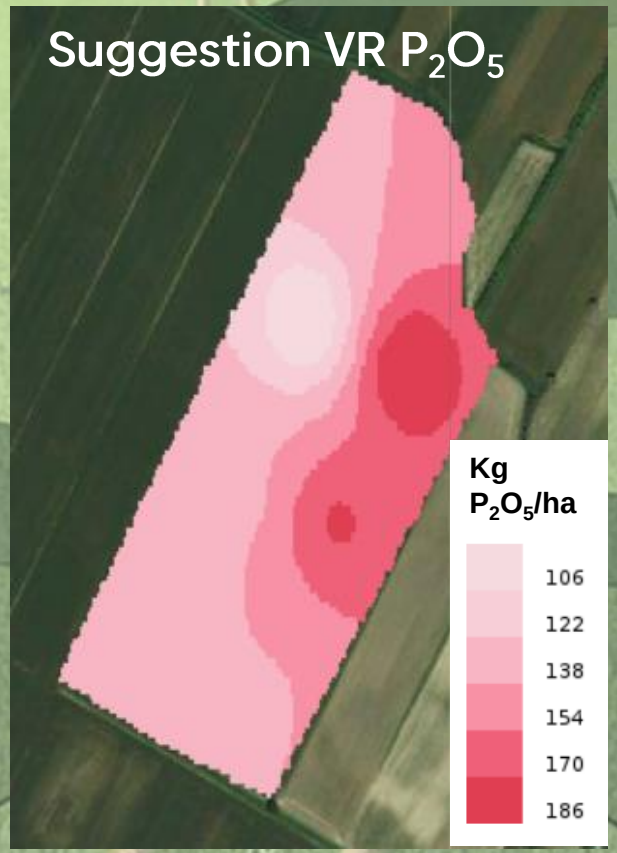






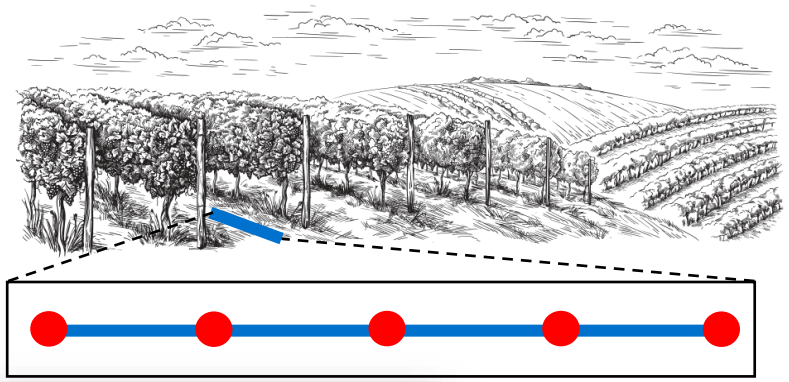
Field level – Variability inside the field and VR suggestions (more samples/field)

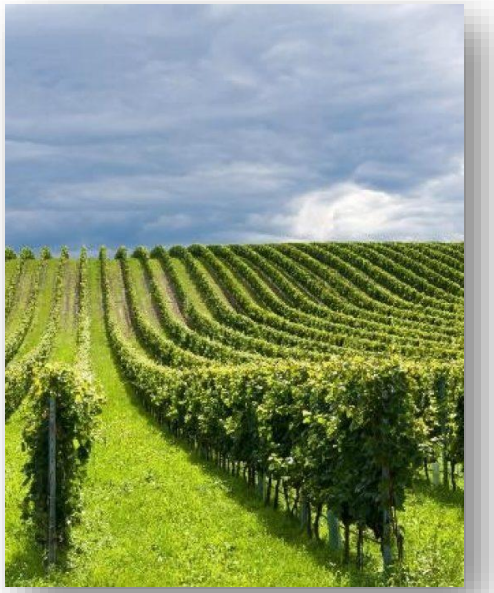




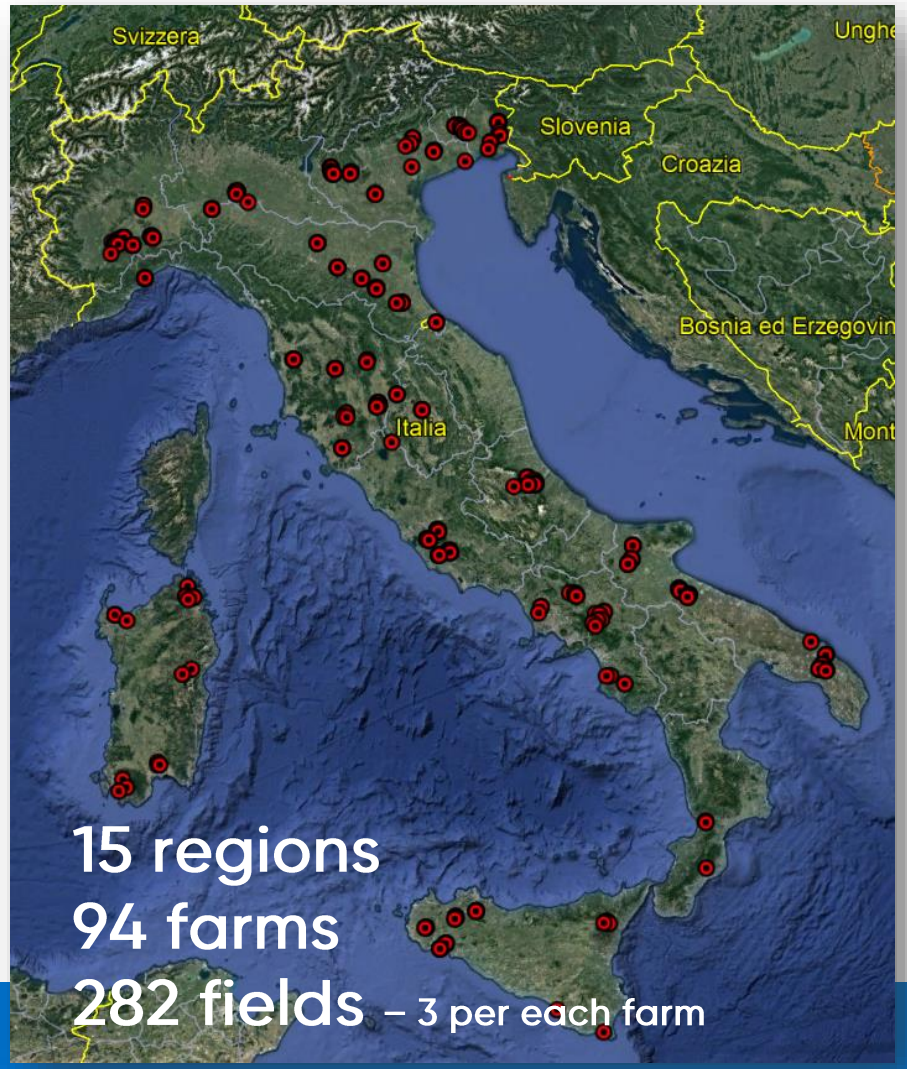
Study of Soil Biodiversity through DNA-metabarcoding technique – BEST Project

Biodiversity in vinEyard agro-ecoSysTems – BEST



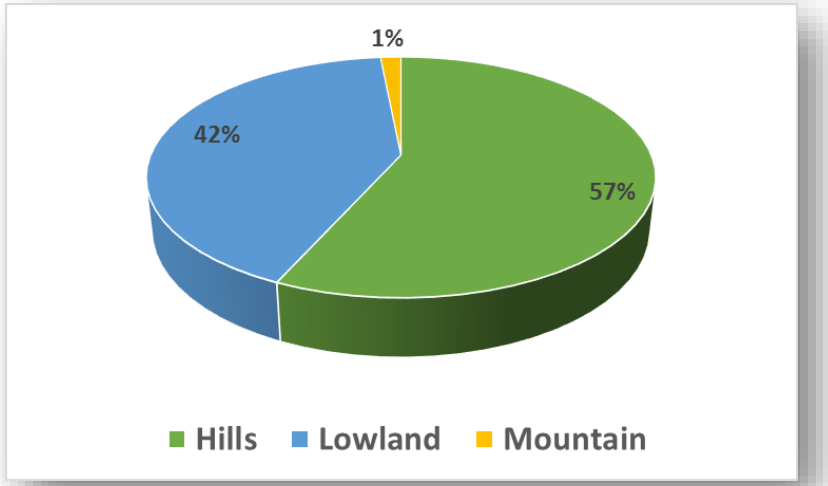


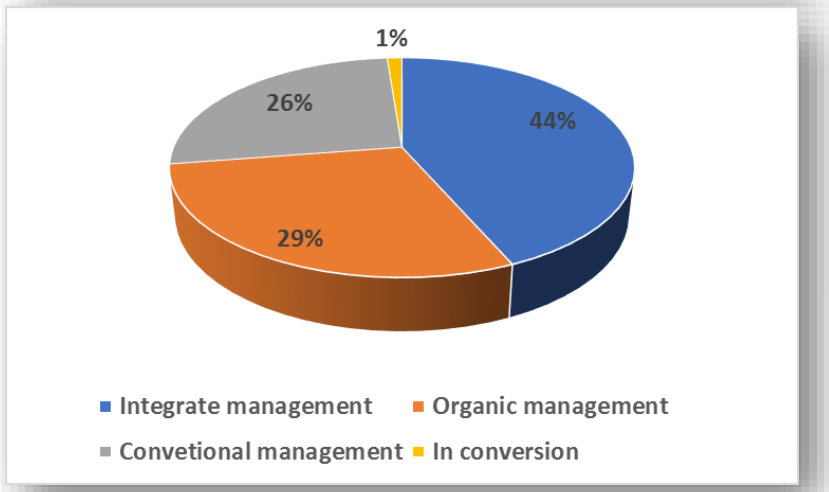
- WineGrapes: one of the main crop in Italy→ about 650k Ha
- Many different environments
- Many different agronomic managements and CV
- Made in Italy brand famous worldwide
- Sustainaibility concept driving the consumers choices



Study of Soil Biodiversity through DNA-metabarcoding technique – BEST Project

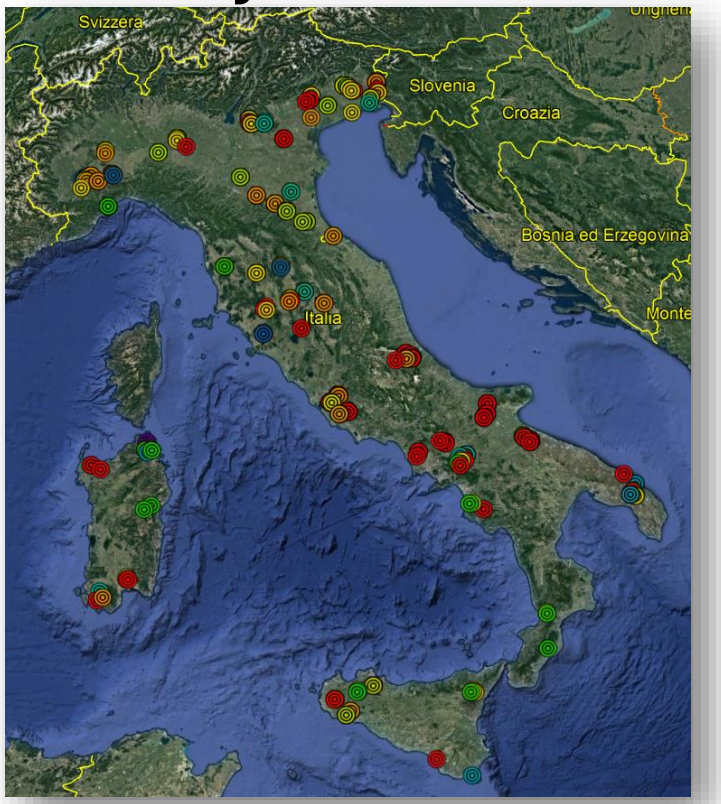
Environment&Agronomics variability





Organic Matter (%)

- 0.6 – 1.5
- 1.5 – 2.0
- 2.0 – 3.0
- 3.0 – 4.0
- 4.0 – 9.4

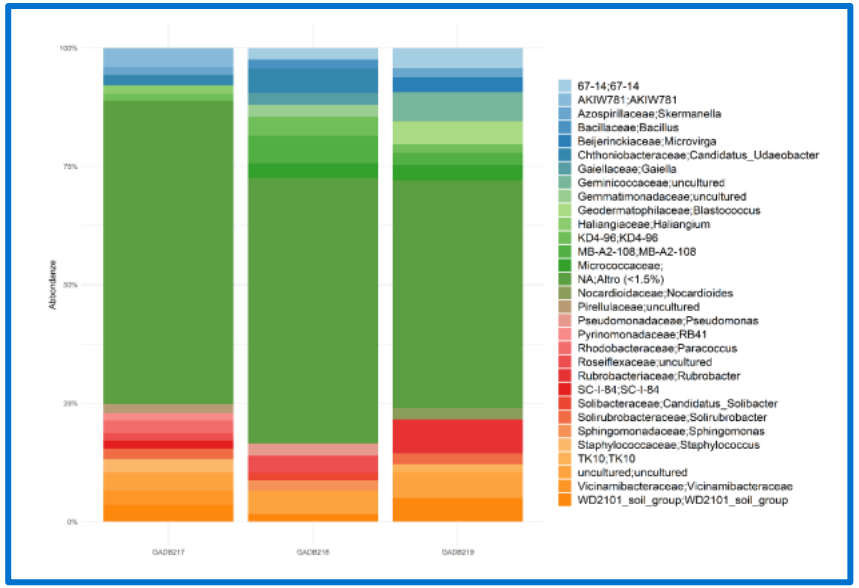


Texture

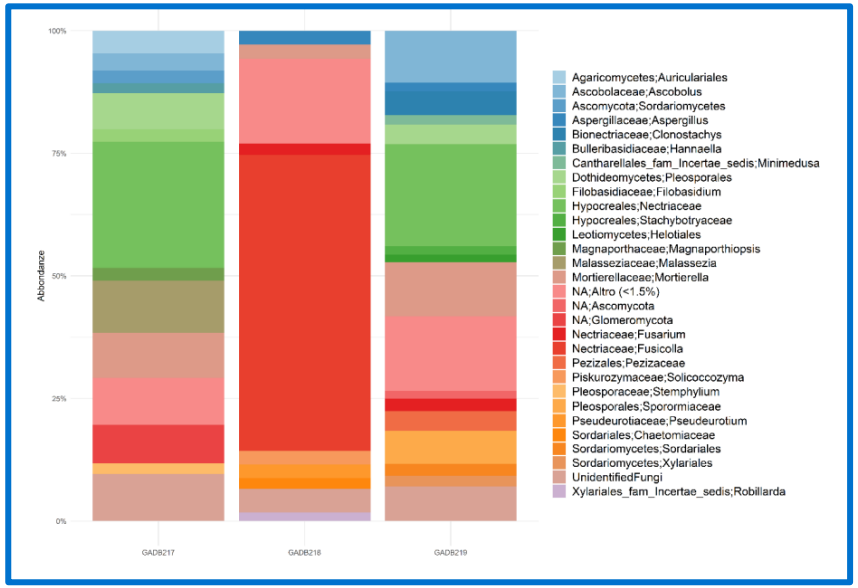
- FRANCO-ARGILLOSA
- FRANCO-LIMOSO-ARGILLOSA
- FRANCA
- ARGILLOSO-LIMOSA
- SABBIOSO-FRANCA
- ARGILLOSA
- FRANCO-SABBIOSO-ARGILLOSA
- FRANCO-LIMOSA
- ARGILLOSO-SABBIOSA
- FRANCO-SABBIOSA

Intra farm variability

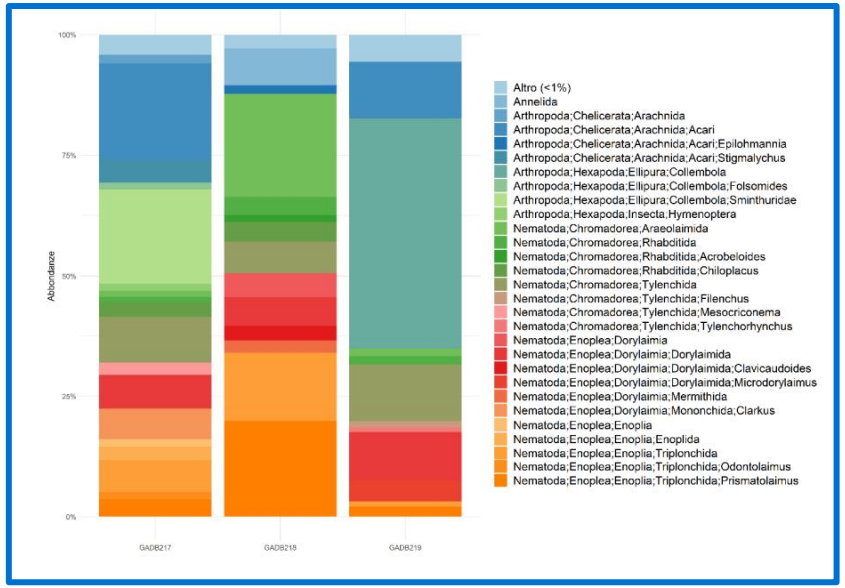
Bacteria Taxa composition

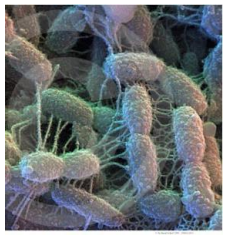


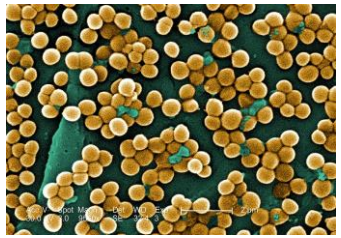
Fungi Taxa composition

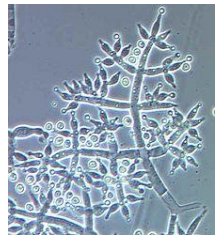
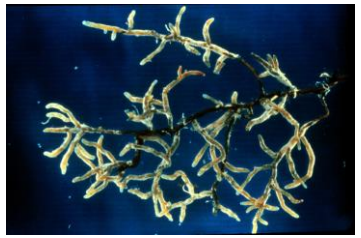
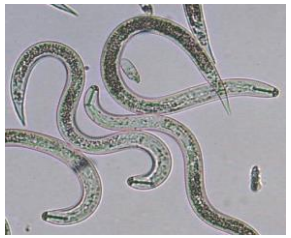


Metazoa Taxa composition

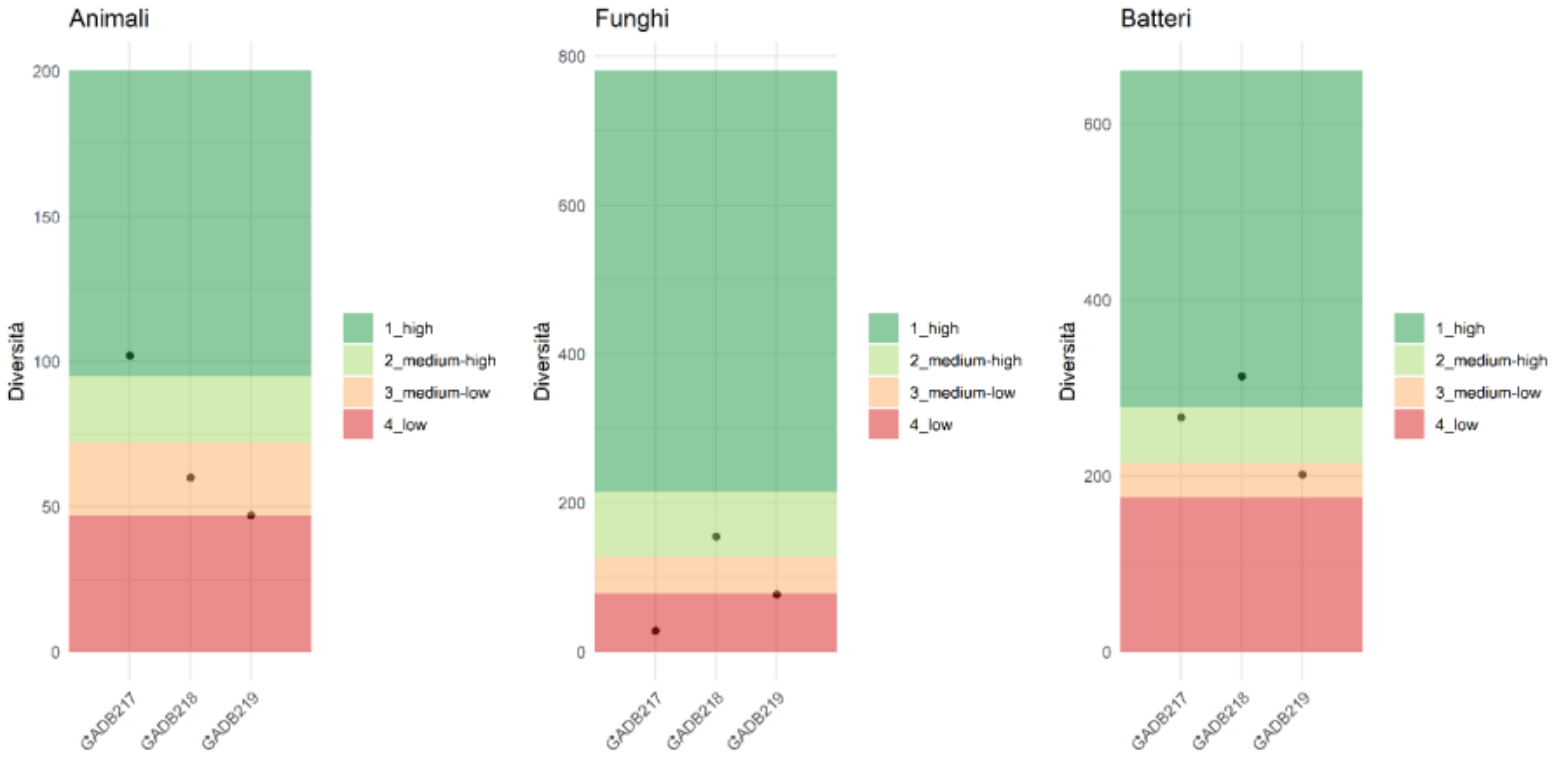






Species richness chart



In the species richness charts, one for each group taxonomic considered (bacteria, fungi and animals), the richness values of species expressed in terms of the number of taxa present in each sample.
The bands of color indicate the quartiles of the distribution of the variable species richness measured over the entire set of soil samples

Red = low values
Orange = values medium-low
Light green = medium-high values
Dark green = high values

Final targets

- Study of the soil biodiversity inside the whole set of farms
- Understand the biovariability across the climate zones and regions
- Study the correlation among Biodiversity & Environment & Agronomics
- Study the correlation between biodiversity & soil physical-chemical parameters
- Promote at farmer level Soil&Agro techniques able to improve the Soil Biodiversity