

Profile View

Details

Title: Platform to measure the health and biological activity (functionality) of soil

POD Reference: TOES20201209001

Summary: A Spanish biotech startup performing biological functional soil analysis has developed a platform able to provide a functional interpretation of soil by using soil microbiome as a biomarker in order to benefit crops and measure the effects of agricultural inputs on soil. The team has expertise in digitalization, DNA sequencing, machine learning, bioinformatics and ecological computing. They seek partners to develop/use this platform under commercial, license or research cooperation agreements.

Description:

A Spanish biotech start-up founded in 2016 has developed a technological platform able to profile the functions of a whole spectrum of soil microbes, combining DNA sequencing technologies and intelligent computing. This technology is being used worldwide and is the most advanced technology for soil analysis. This technological platform uses the largest database of soil microbes.

Generating data on biological activities happening in the soil is extremely disruptive and while the results are crop specific, the process is currently being applied to a huge number of crops. These data can be used to adapt agricultural management decisions in order to reduce agricultural inputs and their environmental impact.

Biological soil analysis provides insights and innovative metrics that measure soil microbiome (both bacterial and fungal species) to improve agricultural yields and lower the environmental impact of agricultural processes. It provides information about the health status of crop soils as well as metrics on general biodiversity, nutritional shortcomings and crop disease risks through the identification of the whole soil microbiome.

The company is seeking partnerships to participate in projects that aim to perform pilot tests related to testing the effects of agricultural input, monitoring soil health status, benchmarking farming practices, measuring disease risks or any other experiment related to soil health.

Therefore, cooperation with farmers, agronomists, companies manufacturing agricultural inputs and other agents related to agriculture sector is envisaged in terms of commercial agreements and/or license agreements. Furthermore, agreements for research cooperation with the same partner types (e.g. European projects) are desirable.

Advantages and Innovations:

This is an innovative strategy that can be used directly by farmers to optimise agricultural management decisions in their fields and thus, reduce the excessive use of agricultural inputs and their environmental impact. It also can be used by agricultural manufacturers to obtain very accurate data about the agricultural inputs they produce that are intended for use in the agricultural sector.

Combining the biodiversity with the functional bioactivity of soil microbiome allows the microbial network models that can be directly applied into the soil to be improved in order to predict the real needs, namely supplying the correct amounts of nutrients and crop protection products.

Others innovations and advantages are:

- Full microbiome profiling: identification of all the bacterial and fungal species populating the soil.
- Most complete database/reference of microbes and soil microbiome profiles for different crops.
- Non-targeted discovery of soil microbes.
- Measurement of biological activities in the soil.
- Estimation of disease risks.
- Ecological properties of the soil.

Stage of Development:

Already on the market

IPR status::

Copyright

Patent(s) applied for but not yet granted

Trade Marks

Comments**Regarding IPR**

Applied for a PCT

Status:**Profile Origin:**

H2020 – Societal challenges – Food security, sustainable agriculture & forestry, water research & bioeconomy

Keywords**Technology**

01003003 Artificial Intelligence (AI)

Keywords:

06003001 Bioinformatics

07001001 Agriculture Machinery / Technology

07001004 Crop Production

07001007 Precision agriculture

Market Keywords: 04001001 Agricultural genetic engineering applications

04006 Cellular and Molecular Biology

04016 Population genetics

05009004 Plant health

Partner Sought

Type and Role of
Partner Sought:

- Type: academic, researchers, farmers, agronomists, companies manufacturing agricultural inputs and other agents related to the agriculture sector.
- Activity & fields of expertise:
 1. Carbon farming
 - a. Carbon footprint in agriculture
 - b. Soil carbon sequestration
 2. Soil-plant-microbial interactions:
 - a. Plant nutrition
 - b. Plant diseases
 - c. Stressed agriculture management
 3. Types of soil and suitable crops
 4. Recover and maintain Soil Health
 5. Impossible soils
 - a. Aquaponics
 - b. Planting in space
 - c. The economics of soil health
 6. Agriculture improvements practices in Latinamerica, Africa, India or Asia.
- Role: Partners interested in recovering soil health using the platform are sought. A commercial agreement with technical assistance or a license agreement are envisaged. Research cooperation agreements, for developing new sustainable agriculture practices, are sought for collaborating in European projects.

Type and Size of
Partner Sought: >500
>500 MNE
251-500
R&D Institution
SME <10
SME 11-50
SME 51-250
University

Type of Partnership:	Commercial agreement with technical assistance
Considered:	License agreement
	Research cooperation agreement

Client

Type and Size of Client:	Industry SME 11-49
Already Engaged in Trans-National Cooperation:	Yes
Languages Spoken:	English Spanish
Client Country:	Spain

Dissemination

Relevant Sector Groups:	Agrofood
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