Brazilian Cerrado Draws International Interest in Soil Microbiome Research

Biome Makers joins the Regenera Cerrado Project, contributing soil microbiome analysis through BeCrop® to research on biological soil health in tropical farming systems

For decades, most research on soil microbiology was carried out in temperate-climate regions. In recent years, however, Brazil's Cerrado biome has taken on a strategic role in generating scientific knowledge on regenerative agriculture, drawing the interest of international institutions and companies dedicated to studying soil health.

It is in this context that Biome Makers, a global AgTech company specializing in biological soil intelligence, is joining the Regenera Cerrado Project. The company will contribute microbiological analysis through its BeCrop® platform, deepening the understanding of how regenerative practices influence the soil's biological function, nutrient cycling, microbial biodiversity, and the resilience of production systems.

According to Adrián Ferrero, co-founder and CEO of Biome Makers, the partnership was motivated by the scientific quality of the initiative. “Regenera Cerrado combines scientific rigor, commercial production conditions, and the long-term perspective needed to understand how regenerative practices affect soil function in tropical production systems. With our technology, we can add a deeper biological layer to the project's agronomic, environmental, and economic data.”

By combining DNA sequencing, ecological computing, and artificial intelligence, BeCrop® translates complex microbial data into practical indicators related to soil health, nutrient cycling, biodiversity, disease risk, and functional resilience.

“In the context of regenerative agriculture, this is especially important, since many regenerative practices are designed to increase biological activity. However, farmers and consultants need reliable methodologies to confirm whether these changes are actually taking place,” notes Ferrero.

Science and Technology Are Essential to Advancing Regenerative Agriculture

Founded in the United States in 2015, Biome Makers developed BeCrop®, a platform based on DNA sequencing and artificial intelligence that, according to the company, draws on the world's largest soil microbiome database. The technology is used by researchers, agronomists, farmers, and agribusiness companies to turn soil biology data into indicators that support decision-making in the field.

According to the company, its engagement with Regenera Cerrado came about because the initiative brings together features considered strategic for generating scientific knowledge: applied research on commercial farms, long-term monitoring, integration of agronomic, environmental, and economic indicators, and evidence generated under real-world growing conditions.

For Eliana Fontes, the Embrapa researcher responsible for the project's technical and scientific coordination, Biome Makers' arrival reinforces one of the initiative's core premises: integrating different fields of knowledge to gain an increasingly precise understanding of how agricultural systems respond to regenerative practices.

“This partnership expands our ability to understand the biological processes taking place in the soil and to connect them to the results observed in the field. By integrating different scientific approaches, we strengthen the body of evidence on how regenerative practices influence soil health and contribute to the sustainability of agricultural systems,” explains the researcher.

Applied Science Strengthens Regenerative Agriculture

Operationally led by the Instituto BioSistêmico (IBS), the initiative monitors farms across different regions of the Cerrado biome to assess the agronomic, environmental, economic, and biological impacts of regenerative practices.

The Regenera Cerrado Project's field work already tracks indicators related to soil carbon, microbiological health, and microbial biodiversity through metataxonomic analysis. With the multinational's strategic support, the

research now incorporates new tools to interpret these biological processes and expand the generation of scientific evidence on regenerative agriculture.

In the assessment of Priscila Callegari, director of the Regenera Cerrado Project, the addition of international partners broadens the project's scientific reach and strengthens the collective construction of knowledge.

“The arrival of a company the size of Biome Makers validates the program's scientific rigor and expands our ability to decode soil biology. This joining of efforts connects practical field research with advanced technology, generating consistent scientific data that gives farmers the confidence they need to adopt regenerative agriculture at scale.”

By bringing together researchers, farmers, public institutions, and technology companies around a shared agenda, the initiative is establishing itself as a benchmark in applied research for regenerative agriculture, contributing to the development of solutions that promote healthier soils, more resilient production systems, and increasingly sustainable agriculture.

About the Regenera Cerrado Project

Conceived by the Instituto Fórum do Futuro in 2022, Regenera Cerrado aims to disseminate scientifically validated regenerative agriculture practices, offering a scalable model for soybean and corn production for Brazil and the world.

In its second phase, the project continues with sponsorship from Cargill, technical and scientific coordination from Embrapa, and operational execution by the Instituto BioSistêmico (IBS), alongside a partnership of seven national institutions and eight farms located in the Rio Verde region of southwestern Goiás.

Partner institutions include the Brazilian Agricultural Research Corporation (Embrapa), the Luiz de Queiroz College of Agriculture (Esalq/USP), the Associated Group for Sustainable Agriculture (GAAS), the Associated Research Group of Southwest Goiás (GAPES), the Federal Institute of Goiás, the State University of Campinas (Unicamp), and the University of Brasília (UnB).

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