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Embrapa and Crop Trust partner to expand access to crop genetic resources for plant breeding

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The three-year collaboration will enhance genetic resource data for more than 260,000 Brazilian crop accessions, supporting research into disease resistance, climate resilience and agricultural biodiversity.



The Brazilian Agricultural Research Corporation (Embrapa) and the Crop Trust have entered into a three-year partnership to improve access to crop genetic resource information and strengthen international collaboration in plant breeding and agricultural biodiversity conservation.

The initiative will focus on expanding the information available through Genesys, a global digital platform managed by the Crop Trust that provides researchers and plant breeders with access to data on more than 4.5 million crop accessions conserved in genebanks worldwide.

Under the agreement, both organisations will work to improve the accessibility and usefulness of Brazil's agricultural genetic collections, supporting the identification of plant characteristics relevant to crop productivity, disease resistance and adaptation to changing climatic conditions.

Expanding genetic resource information for crop improvement

Embrapa currently shares information on more than 260,000 accessions from 26 research units through Genesys. These collections cover agricultural crops including rice, beans, cassava and pineapple. The partnership aims to expand this information by incorporating additional data on plant characteristics, helping researchers identify genetic material with potentially valuable traits.

Such information could support breeding programmes seeking varieties with improved drought tolerance, disease resistance and resilience to environmental stresses. According to Embrapa, making crop genetic information easier to access will help connect decades of biodiversity conservation research with practical applications in agricultural improvement. Ana Euler, Director of Social Innovation and Technology Transfer at Embrapa, said the collaboration will strengthen knowledge of Brazil's genetic resources while creating additional opportunities for crop research and breeding.

Linking digital platforms and research capabilities

A key component of the partnership involves strengthening connections between Embrapa's Alelo genetic resource information system and the Crop Trust's digital platforms. The organisations plan to conduct technical exchanges and training activities to improve data management, information sharing and the use of genetic resources.

The collaboration also includes plans to make Genesys available in Portuguese, improving accessibility for scientists and agricultural researchers in Brazil and Portuguese-speaking African countries. Both institutions will explore opportunities for joint research projects and additional funding to strengthen conservation capabilities and international scientific cooperation.

Supporting underutilised crops and agricultural biodiversity

Beyond improving information systems, Embrapa and the Crop Trust will explore collaborative research involving underutilised crops that have received relatively limited scientific attention. These crops could provide opportunities to diversify agricultural production and strengthen food system resilience, particularly in regions vulnerable to climate variability.

The partnership will also examine proposals for five potential Globally Important Agricultural Heritage Systems sites in Brazil's Amazon region. These activities are intended to support the conservation of agricultural biodiversity while improving the practical use of genetic resources in research and crop development.

Stefan Schmitz, Executive Director of the Crop Trust, said making conserved crop diversity accessible and understandable to breeders is essential for translating genetic resource conservation into agricultural innovation. The collaboration builds on existing cooperation between Embrapa and the Crop Trust and reflects wider international efforts to connect genebank collections with modern plant breeding technologies.

While the agreement does not announce the release of new crop varieties, it is expected to strengthen the data infrastructure supporting future breeding research and the development of crops better adapted to agricultural and environmental challenges.