



Fungi in Focus: Bioproducts for Climate-Resilient Crops

This work aims to develop a strategy to increase the production and resilience of maize against climate change, using native beneficial fungi, promoting a sustainable agricultural system that can be expanded to other crops in Colombia and Argentina.



Native fungal biodiversity in promoting positive effects on maize agroecosystems

The implemented initiative

This study aims to evaluate the contribution of native beneficial fungi from Argentina, Colombia, and New Zealand, selected for their biocidal and biofertilizing properties, in mitigating the effects of climate change on maize crops. The potential of entomopathogenic and antagonistic species, as well as arbuscular mycorrhizal fungi, will be validated in promoting plant growth,

reducing the use of agrochemicals, stabilizing soil carbon, and improving plant drought tolerance. Additionally, partnerships with producers will be established to ensure effective knowledge transfer generated by research entities. This project is funded by Fontagro and carried out by research centers in Colombia, Argentina, and New Zealand

Bioinputs in sustainable agriculture with a focus on climate resilience

The technological solution

This project targets the maize production sector, highlighting its crucial role in global food security as demand grows and the need for climate change adaptation increases. The technological proposal focuses on the use of bioinputs, leveraging the potential of native microorganisms as biofertilizers, biocontrol agents, and biostimulants to enhance crop sustainability. Implementing these species promotes habitat colonization, optimizes soil structure and nutrient flow, and improves resistance to biotic and

abiotic stresses. The approach aims not only to increase maize cultivation efficiency but also to expand the applicability of bioproducts to other agricultural sectors. Additionally, strategies for knowledge management and transfer will be developed, working closely with producers and academic and government entities in the involved countries to ensure the adoption and positive impact of these technologies in agriculture.

Results

The project will create a database of beneficial fungi such as Beauveria, Metarhizium, and Trichoderma, assessed for their insecticidal and antagonistic efficacy against pests and pathogens. Results will be disseminated through technical notes and field experiments, supplemented with workshops and educational materials for the agricultural community in Argentina and Colombia. An economic analysis will also be conducted on the reduction of fertilizer and pesticide

usage following the adoption of these sustainable alternatives. Regarding the quantifiable impacts of the project, an increase in crop productivity by 5%, a 50% reduction in the use of agrochemicals, a 10% improvement in soil carbon stabilization, and enhanced drought tolerance in maize are anticipated. These benefits underscore the importance and potential of implementing sustainable solutions in modern agriculture.

MÁS INFO



Main donors



Participating Organizations

