

The reduction of greenhouse gases and the increase in productivity as a driving force to achieve sustainable agriculture.

ARGENTINA / CHILE / COLOMBIA / SPAIN / URUGUAY / BRAZIL

 Webstory



The technological solution

The generation of greenhouse gases by agriculture accelerates climate change, increasing temperatures and decreasing precipitation, which in turn has an effect on agriculture itself.



Description

In this project, we have found a way to genetically improve inoculants without using genetically modified microbes. The goals pursued are the obtaining of spontaneous mutations and new microbial isolates that improve the productivity, nutritional quality, and environmental quality of the main crops.



Results

The sequencing and genomic analysis of the 18 main inoculants used in Latin America and the Caribbean demonstrated that the majority of these bio-inputs can be potential emitters of nitrous oxide.

Genetic variability was obtained for some of the responsible clusters in certain microorganisms, leading to the identification of 7 inoculants that reduce nitrous oxide emissions in crops.

It was confirmed that these strategies do not have negative economic impact; in fact, some of these microbes also improve the nitrogen content in soybean plants.

Crop productivity was improved through various mechanisms in microorganisms, including increased herbicide tolerance, greater nutrient availability, and increased pathogen tolerance.

-99 %

Reduction of N2O emissions in alfalfa.

-20 %

Reduction of N2O emissions in soybean.

+8 %

Increase in nitrogen content in soybean.

+5

Glyphosate-tolerant rhizobia for soybean.

7

Supported doctoral theses.

6

Countries engaged in genetic improvement.

ABOUT FONTAGRO

FONTAGRO is a unique cooperation mechanism for agricultural innovation in Latin America and the Caribbean (ALC) and Spain, that works through regional platforms. It is composed of 15 countries that have contributed capital exceeding 100 million dollars and the Inter-American Development Bank (IDB), which is its legal representative.

ORIGIN OF RESOURCES



● **Counterpart contribution**
93.177.555

● **FONTAGRO**
28.989.468

● **IDB**
9.922.700

● **Other agencies**
9.809.078

PARTICIPATION AND ROLE IN CONSORTIUMS SINCE 1998



FONTAGRO IN NUMBERS

193 Number of projects approved

141.9 Approved total amount US\$
MILLONES

9.8 Contribution from other agencies
MILLONES

32 Benefited countries

63 Generated technologies

15 New technologies for ALC

8 Technology of global relevance

MEMBER COUNTRIES

