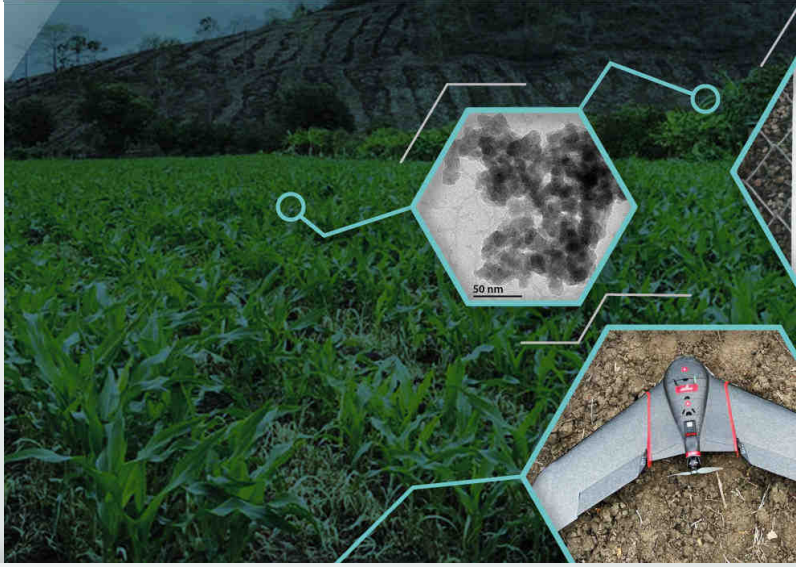
FONTAGROTECH



Nanofertilizers in the soil and nitrous oxide emissions

COLOMBIA / ECUADOR

Webstory

The technological solution

Synthesize and characterize titanium dioxide, zinc oxide, and zeolite nano-fertilizers to evaluate their effect on fertilization, nutrient use, and nitrous oxide emissions.

Description

Nanotechnology research applied to sustainable agribusiness. Nano-fertilizers will be synthesized and characterized. Ecotoxicological bioassays and greenhouse and field studies will be carried out to determine edaphic characteristics, biomass, the spectral response of crops and GHG emissions. This project will create a spin-off.

Results

- Images and histograms with particle sizes of the synthesized nano-fertilizers.

- Publication of scientific paper.

- X-ray diffractograms and XPS spectra.

- Categorization with the environmental impact of nano-fertilizers on a terrestrial organism under laboratory conditions using the mean effective concentration (EC50) of nano-fertilizer evaluated.

- Evaluation of the increased nutrient uptake and the efficiency of plant nutrients with the addition of nano-fertilizers.

- Evaluation of the effect of nano-fertilizers on the soil's physical, chemical, and biological characteristics.

- Publication of scientific paper.

- Evaluation of the increase in biomass production and nutritional quality of crops/vegetation.

- Evaluation of nitrous oxide and soil carbon dioxide emissions in experiments with and without application of nano-fertilizers.

MAIN DONORS
FONTAGRO

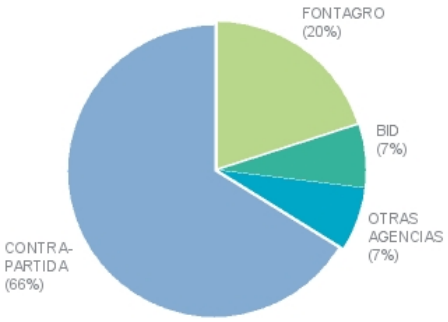
PARTICIPATING ORGANIZATIONS
IICA
ASOCI.

FONTAGROTECH

ABOUT FONTAGRO

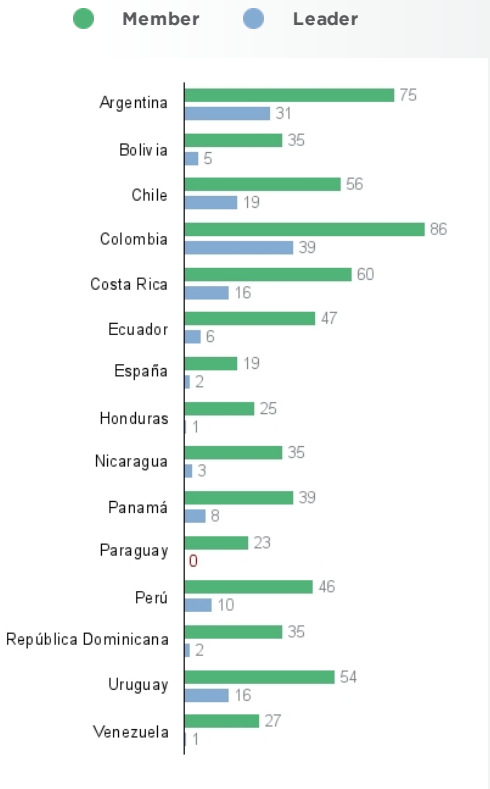
FONTAGRO is a unique cooperation mechanism for agricultural innovation in Latin America and the Caribbean (ALC) and Spain, that works through regional platforms. It is composed of 15 countries that have contributed capital exceeding 100 million dollars and the Inter-American Development Bank (IDB), which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

9.8 MILLONES Contribution from other agencies

32 Benefited countries

63 Generated technologies

15 New technologies for ALC

8 Technology of global relevance

MEMBER COUNTRIES

- Argentina
- Bolivia
- Chile
- Colombia
- Costa Rica
- Dominican Republic
- Ecuador
- Honduras
- Nicaragua
- Panama
- Paraguay
- Peru
- Spain
- Uruguay
- Venezuela

FONTAGRO