Fertilization strategies that reduce emissions of nitrous oxide in forage grasses on farm in the low tropics

**Project Title:** P1599 - Catalyzing farmer innovations and the adoption of promising management and technological options to facilitate the development of low-carbon cattle value chains in Latin America

**Description of the innovation:** The agronomic and productive performance, nutritional quality and nitrogen use efficiency of the most common pasture grasses of the low tropics was evaluated in response to different N sources. The N flow between soil, plant and environment was evaluated for the treatments with the highest NUE. Subsequently, the N flux between soil, plant and environment was evaluated for the treatments with the highest NUE at different fertilization rates.

**New Innovation:** Yes

**Stage of innovation:** Stage 2: successful piloting (PIL - end of piloting phase)  
**Innovation type:** Production systems and Management practices

**Geographic Scope:** Sub-national

**Country(ies):**  
● Colombia

**Description of Stage reached:** Fertilizer sources and doses were identified to achieve higher forage productivity and N uptake, increasing these parameters up to 43%; for the conditions of the farm. The best-performing fertilizer-dose treatment allowed NUE of 93% and reductions of nitrous oxide emissions up to 40 % compared to other management practices.

**Name of lead organization/entity to take innovation to this stage:** CIAT (Alliance) - Alliance of Bioversity and CIAT - Regional Hub (Centro Internacional de Agricultura Tropical)

**Names of top five contributing organizations/entities to this stage:**  
● YARA

**Milestones:**  
● Analysis of farmers’ incentives and barriers to adoption to increase input efficiency and reduce FLW while also reducing emissions

**Sub-IDOs:**  
● 8 - More efficient use of inputs

**Contributing Centers/PPA partners:**  
● CIAT (Alliance) - Alliance of Bioversity and CIAT - Regional Hub (Centro Internacional de Agricultura Tropical)

**Evidence link:** https://hdl.handle.net/10568/111255

**Deliverables associated:** <Not Defined>
Contributing CRPs/Platforms:

- CCAFS - Climate Change, Agriculture and Food Security
- Livestock - Livestock