UT, UNIVERSIDAD DE TOLIMA, COLOMBIA

Technological innovation in Andean cacao

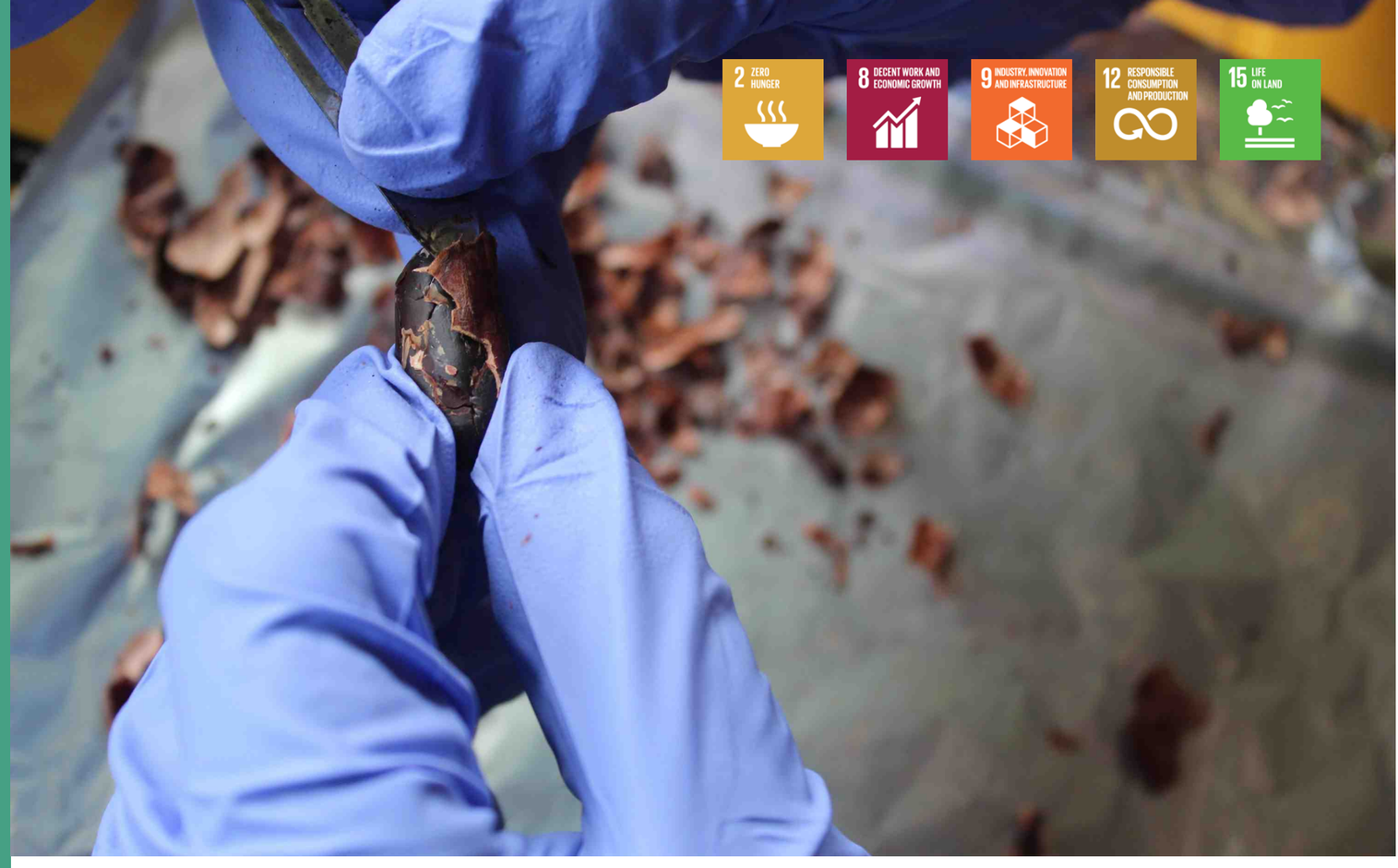
It is necessary to establish technological innovations for cocoa producers in Andean areas focused on improving cocoa bean quality during production and processing in order to acess new markets

1150
Producers benefited

300
Female producers trained

25
Appropriation of knowledge

10
Differentiated quality materials



¿What development and innovation required Andean cacao?

The implemented initiative

Cocoa is an important source of income especially for small producers, however it is required more research in order to generate practical solutions to meet market requirements. It is necessary to select differentiated materials by their organoleptic quality, agricultural practices that reduce the presence of cadmium in the seed, improvements in the fermentation stage including the use of starter cultures that improve the organoleptic quality, and include the encapsulation of the flavonoids present in the grain focused on the market of nutritional supplements, of high demand and greater benefit.

Improving the competitiveness of Andean cacao

The technological solution

It seeks to close the gaps in Andean cocoa production with the producers, in order to generate technological improvements such as: I) generation of a geographic information system of three producing areas for each country with an emphasis on edaphoclimatic variables that influence cocoa quality, II) identification of high quality regional materials that can be used for future planting processes, III) the analysis of the productive system and the presence of cadmium in the soil, as well as possible practices that decrease the absorption of this metal IV) a prototype of an ecological fermenter with the application of starter microorganisms that improve performance and organoleptic quality, IV) the development of encapsulated prototype rich in flavonoids present in the seed, with the evaluation of the antioxidant activity V) knowledge transfer through virtual interactive conferences

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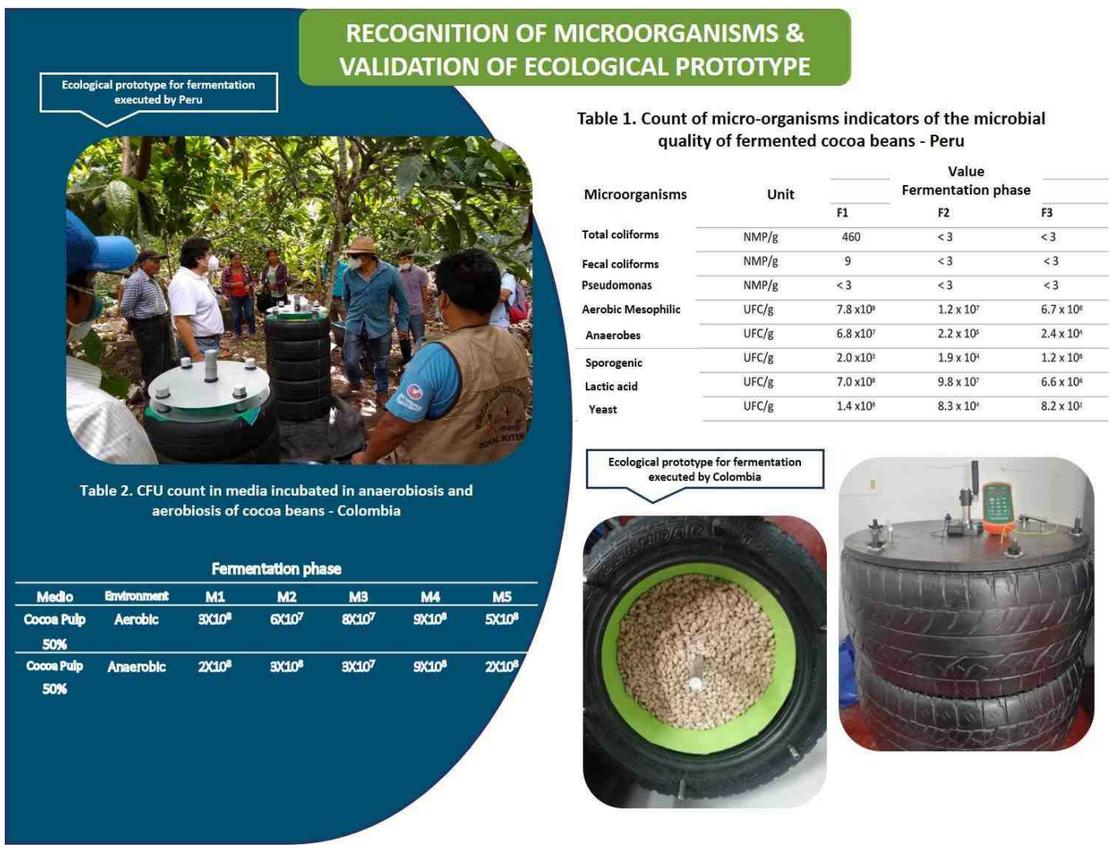

Results

A geographic information system was generate with the selection of differentiated quality materials. At the nursery level, it was found that clone CCN 51 is characterized by a greater tolerance to the presence of cadmium in soils. Likewise, it was confirmed that soil remediation applying dolomite lime plus mycorrhiza reduces the presence of cadmium in the leaves, this being a technological improvement. For the fermentation stage there is a bank of isolated microorganisms with species such as yeast and lactic acid bacteria. Likewise, two ecological prototypes for fermentation were validated, which stand out for their isolation system and low cost. An encapsulation process for cocoa flavonoids was standardized, this producto is characterized by their high antioxidant capacity. Finally, the results have been shared through participation in congresses, explanatory videos, and virtual conference cycles.

MÁS INFO

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Participating Organizations

UNIVERSIDAD DE CHILE · UNIVERSIDAD NACIONAL AGRARIA LA MOLINA · Universidad de Ibagué · Universidad del Tolima

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