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Use of fog water to the initial establishment of tree species under conditions of barren Lomas in the Quebrada Topará, Chincha-Perú

A. Vargas (1), R. Cabrera (1), K. Bederski (2), and A. Orellana (3)

(1) Universidad Nacional San Luis Gonzaga de Ica, Ica,Perú (aaronvargasg@gmail.com), (2) Fundo Vivero Organico Huaquina,Ica, Perú(klaus@toparaorganico.com), (3) Servicio Nacional de Áreas Naturales Protegidas por el estado-MINAM,Ica,Perú(bio_aog@hotmail.com

The Quebrada Topara is located in the Peruvian coastal desert ($13^0 12' $L.S, $76^0 09' $L.W.) and is influenced by the fog during the winter months, these conditions of high humidity allows its use to achieve the establishment of a permanent vegetation cover Huaquina hill, which is representative at the place of study.

Uncounted fog water can be captured and used for irrigation of plants. Also due to the absence of any tree species coverage in this region is not known which or which could have a better performance under these environmental conditions, We used to native species ***Caesalpinia spinosa*** "tara" and ***Schinus molle*** "molle" also introduced species ***Casuarina equisetifolia*** "Casuarina", as these could have a better adaptation. Soil analysis determined a high salinity and nitrogen poverty, preventing water infiltration into the soil and is not used by the plant so that the saline soil difficult to establish plants.

This research can be considered an exploratory phase, the objectives were: to determine the potential for fog water harvesting to capture in the study area, to assess for 20 months the initial performance of the species tara, molle and casuarina, and profit incorporation in the final sowing of organic matter and soil amendments to facilitate a better development of plants.

3 standard fog collector (SFC) proposed by Schemenauer and Cereceda (1993) were installed and we evaluated the capture water during 31 months, from June 2007 to December 2009, finding much water collected in the winter months, the average annual in the 3 SFC was similar (1.1, 1.2 and 1.1 L m $^{-2}$ day^{-1}) which allows us to plan according to necessary the best way to harness and store water to supply the plants.

It was found that native species, tara and molle were more adaptable to extreme conditions of the place that introduced casuarina species. The tara does grow faster in height and stem diameter, also achieves a good coverage to intercept fog water itself making it more viable and capable of being established. It provides statistics that indicate the beneficial effect of improving soil with organic matter and amendments in the survival rate and vegetative growth of tree species.