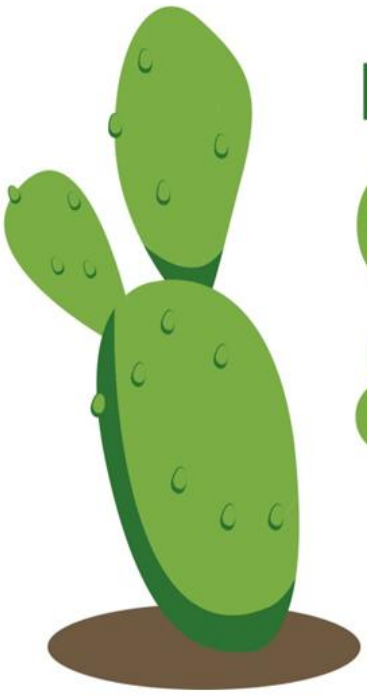

IX International Congress on Cactus Pear & Cochineal

"CAM crops for a hotter and drier world"

COQUIMBO - CHILE 2017

Book of Abstract and
Symposium Program

ISHS

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WELCOME

Dear colleagues, On behalf of the International Society for Horticultural Science (ISHS) and FAO-ICARDA International Technical Cooperation Network on Cactus, the University of Chile honored to receive you at the **IX INTERNATIONAL CONGRESS ON CACTUS PEAR AND COCHINEAL *"CAM crops for a hotter and drier world"*** and the **General Meeting of the FAO-ICARDA International Cooperation Network on Cactus Pear and cochineal (CACTUSNET)**, in **Coquimbo, Chile, March 26th - 30th, 2017.**

The University of Chile, with Dr. Fusa Sudzuki as convener, organized the II International Congress on Cactus pear and Cochineal which was hosted in Santiago in 1992. This special opportunity for hosting the IXth congress, allows us to bring back the congress to Chile, one of the few countries worldwide were cactus pear fruits ("tunas") are commonly consumed and form part of the traditional diet. Many things have changed during these 25 years: Chile has consolidated as one of the world leaders in the fresh fruit export industry and, regarding cacti, new CAM-crops (eg. "Copao" [*Eulychnia acida*], pitahaya) are being developed. And the use of *Opuntias* as a source of fodder and energy has grown in the country.

Now we have the opportunity to share these new developments with the international Cactus community in the beautiful city of Coquimbo, at the southern margin of the driest desert of the world (Atacama) along the Pacific coast and at the feet of the Andes mountain range. The city is surrounded by valley oases which host a third of the Chilean cactus pear growing area. It shall be our pleasure to welcome you back in Chile.

THE CONVENERS

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Edition Book of Abstract

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Design of the Congress logo: Carmen Sáenz Escobar

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SOIL VOLUME: THE EFFECT OF POT SIZE ON ROOTS AND CANOPY GROWTH PERFORMANCE OF CACTUS PEAR

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The influence of soil volume on roots and canopy growth performance of cactus pear (*Opuntia ficus-indica*) was studied at Palermo University. In November 2014, 1 year old *Opuntia ficus-indica* cladodes were planted in five different size of pots 49, 33, 18.5, 9 and 6 L. Three replicates (plants) per pot size were dug out at 6 and 12 months. The resulting experimental design was a randomized complete block design with three replications (each replication was one plant in one pot size). Roots were washed and roots length was manually measured. Roots fresh and dry weigh was obtained. Cladode surface area, cladode thickness, number of new cladodes, cladode fresh and dry mass were measured and recorded for each plant. Results indicate a significant effect of pot sizes (*P<0.01*) on root length, root fresh weight, and dry weight in both studied intervals. Roots of cuttings planted in pot sizes 49 and 33 L exhibited significantly the highest values of length, fresh and dry weight. Increasing the pot size enhanced the thickness, fresh and dry weight of the cladodes (*P<0.01*) in both interval but not the surface area. Mother cladode dry weight was affected by the smallest pot size (*P<0.01*). In the first interval, number of the new cladodes for both first and second generation was not affected by the pot size. On the contrary, in the second interval, pot size exhibited significant effect on new cladode production and pot sizes 49 and 33 L recorded the highest (*P<0.05*) number of new cladodes. In both intervals no second generation new cladodes were observed in 9 and 6 L pot sizes. In both intervals, the root dry weight was strongly correlated to the root length and fresh weight (r =0.89 to 0.99, *P < 0.01*), total cladodes fresh and dry weight (r =0.64 to 0.95, *P < 0.01*) and to mother cladode fresh weight (r =0.71 to 0.95, *P < 0.01*). These results suggest that the limitation of soil availability resulted in root and canopy growth limitation.

Keywords: *Opuntia ficus-indica*, roots/canopy mass, roots length, roots surface area, cladodes mass

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