



IX International Congress on **Cactus Pear & Cochineal**

"CAM crops for a hotter and drier world"

COQUIMBO - CHILE 2017

Book of Abstract and
Symposium Program





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 where 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.

1

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

Universidad de Chile

Facultad de Ciencias Agronómicas (IHB)

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SESSION 4: Fruit production: orchard and fruit management

EVALUATION OF *OPUNTIA FICUS-INDICA* AS A MULTI-PURPOSE SPECIES UNDER WEST ASIA CONDITIONS

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92

The agronomic potential of *Opuntia ficus-indica* (L.) Mill. a multi-purpose crop is becoming increasingly apparent in arid and semi-arid regions. Nevertheless, the main limitation for the adaptation and distribution of *O. ficus-indica* is the cold temperatures that cause severe freezing damage or ultimate plant death. The objectives of this study were to assess the cold tolerance of different cactus pear cultivars with various origins and quantify their forage production potentials under semi-arid conditions of Jordan. Cladodes of a total of 40 cactus pear cultivars were planted in April 2013 using a completely randomized design with five replicates. Frost damage was recorded visually after each occasion of frost occurrence in each year, and number of cladodes per plant was quantified. Five cladodes from each established plant were cut and weighed to estimate the cladode green biomass weight. Significant differences in cold/freezing tolerance, pad numbers and biomass production among tested *Opuntia ficus-indica* cultivars were detected ($P < 0.01$). COPENA V1, 74115_Bab Toza, and 74001 cultivars produced the highest number of pads. 69223_Burbank Azrou, 2_25_15 and Bianca de Bonacardo were the most frost tolerant since no frost effect observed on any cladode. Seedless Roccapalumba had the lowest number of cladodes and showed high sensitivity to low temperatures. The average cladode weights of 69242_Matmata, 69246_Oueslatia, and COPENA V1 were the highest while Red Roccapalumba and 10_FOZA10 had the lowest average cladode weight. The findings of this study showed a significant positive correlation between number of cladodes and the average cladode weights ($r = 0.55$, $P < 0.01$). Based on the high variations, it can be concluded that the potential of spineless cactus is high to greatly benefit livestock production in arid cold regions especially if we consider cultivar adaptation potential in order to choose the suitable cultivar for each environment.

Keywords: West Asia, forage productivity, frost damage, semi-arid, CAM





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