



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.

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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 2: CAM plants as a source of forage and energy

ASSESSMENT OF DIFFERENT SUPPLEMENTAL FEEDING STRATEGIES INCLUDING CACTUS (*OPUNTIA FICUS-INDICA*) FOR HIGHER SHEEP PRODUCTIVITY IN CHAKWAL, PAKISTAN

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Small ruminant production remains the main source of income of rural population living in arid and semi-arid regions of Pakistan. Sheep and goats raised in these areas are generally confronted with severe nutritional deficits in addition to negative impact of climate change. Cactus (*Opuntia ficus-indica*) was introduced to farmers in the dry areas of Chakwal in 2014 as a succulent and drought tolerant species with great potential to provide fodder reserve to fill the gap in feed resources. Cactus cladodes are high in water, sugars, ash and vitamins A and C, but they are low in crude protein (CP) and fiber. This study was conducted to compare the effect of three different supplemental feeds including oat, lucerne and spineless cactus in addition to a control treatment (farmer practice without supplementation) on sheep productivity. Four flocks were selected and *ten sheep* of similar age and weight per flock were sampled at random in a completely randomized design. The crude protein (15 %) and total digestible nutrients (TDN 67 %) of the three formulations were almost similar. Measurement of live-weight gain was recorded on a fifteen days intervals. Findings indicate that dry matter intakes was not significant and ranged from 0.9; 0.99; 1.04 to 1.02 kg DM/day for oat, lucerne, cactus and control. Ewes fed on oat and lucerne based supplemental feed showed equal higher live-weight gain (66.7 g/day) followed by cactus based supplemental feeding (33.3 kg/day) over a 60 day period. Live-weight of ewe grazing rangelands only (control) have the lowest gain per day (17 g/day). We conclude that, adding cactus in sheep feeding has a positive impact on live-weight gain compared to solely grazing poor rangeland conditions.

Keywords: cactus, supplemental feeding, small ruminant production, total digestible nutrients





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