

Evaluation of hardiness capacity to low temperatures of pepper *Capsicum annuum* L. cultivated in non heating greenhouse

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Abstract

The pepper *Capsicum annuum* L. it is a sensitive specie at low temperatures. Therefore, this crop during autumn and winter months under the climatic conditions of Tucumán, Argentina, still in non heating greenhouses, it is exposed to occurrence of cooling conditions, affecting their growth and productivity. The purpose of this work is to evaluate the pepper hardiness capacity to cold through leaf determination of the relative content of water (C.R.A.%), conductivity of cellular eflux that allowed to calculate the tissue injury index (T.I.I.) and reducers sugars content (C. Az. Rd). The study was made with the hybrid PRE-DICTS F1, during march and november, in a non heating greenhouse. A completely randomized design was used, carrying out 6 surveys with three replications. Internal greenhouse temperature was registered daily. The information show that pepper, in relation to hardiness, made an adjustment of membranes permeability avoiding to excessive desiccation of tissues, but without an increment of the relative content of water when thermal conditions are improved or TII values are increased. Also, these changes were not associated with increments sugars reducers contents. Therefore, under the conditions of this study, the pepper evidenced a limited capacity of adaptation to the occurrence of low temperatures.

Key words: *Capsicum annuum* L., evaluation, greenhouses, hardiness, low temperatures.

Recibido el 06-07-1999 ● Aceptado el 11-10-1999

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