

A PROTEOMIC APPROACH TO STUDY THE LOW TEMPERATURE STRESS INDUCTION IN BELL PEPPER FRUIT

P. Sánchez-Bel⁽¹⁾, ***I. Egea***⁽¹⁾, ***M.C. Martínez-Madrid***⁽²⁾, ***F. Romojaro***⁽¹⁾, ***M.C. Bolarin***⁽¹⁾, ***M.T. Sánchez Ballesta***⁽³⁾, ***F.B. Flores***⁽¹⁾.

⁽¹⁾CEBAS-CSIC, ⁽²⁾EPSO-UMH, ⁽³⁾ICTAN-CSIC.

A proteomic approach has been undertaken to investigate the triggering of the physiopathy of chilling injury (CI) in bell pepper (*Capsicum annuum* L.). This physiological perturbation is caused by low temperatures stress and it negatively affects to fruit quality. The proteome of fruits conserved at a temperature that does not induce CI and of fruits conserved at a temperature of CI induction have been compared, using the proteomic profile of fruits at harvest date as reference. After that storing fruits were conditioned to room temperature, when CI symptoms became evident. The physiological impact on fruits of the temperature inducing CI has been verified. The analysis and identification of proteins have been performed by 2D-DIGE and MS/MS fragmentation. The preliminary results showed that major modifications in protein expression are related to those involved in oxidative stress, which is one of the main physiological responses of plants to abiotic stress. The role of such proteins in the response to the stress that was subjected to the fruits is discussed.