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**PROGRAMME &
BOOK OF ABSTRACTS**

about this abnormality in chicory, which is assumed to result from cell damage and subsequent oxidation of phenolic compounds. In this study physiological and anatomical approaches are combined for a better understanding of the occurrence and induction mechanism of reddening. At first, the red spots in the chicory leaf tissue were anatomically located and described. By using light microscopy leaf structures were investigated in detail, leading to a more precise insight in the occurrence and localization of leaf damage at the cellular level. In addition, effects of different environmental parameters (e.g. forcing temperature, storage temperature) and root properties (e.g. harvesting time, type of hybrid) with a potential influence on the degree of reddening after forcing, were evaluated. Important physiological characteristics such as free sugars and amino acids, were measured in both the roots and produced chicory heads. A comparison was made between reddening at harvest and reddening development during storage of the chicory. For the three hybrids (Mont Blanc, Metafora and Vintor) investigated in this study, it can be stated that sensitivity for reddening is hybrid specific. Moreover, the amount of remobilized free amino acids from the roots has been found indicative for red discoloration. Finally, temperature control through the whole endive chain is of crucial importance, because higher temperatures (+4 °C) exacerbate reddening.

S13.335

Effect of the Mechanical Injury Size on Tomato Firmness

Paiva, A. S. de.; Pessoa, J. D. C.; Calbo, A. G.; Carneiro, M. C. M.; Albino, A. L. S.

EMBRAPA AGRICULTURAL INSTRUMENTATION, RUA XV DE NOVEMBRO, 1452, P.O. BOX 741, 13560-970, SÃO CARLOS, SÃO PAULO, BRAZIL

It has always been a challenge to establish a relationship between the size of the plant organ injury, which occurred during transportation or storage, and post-harvest losses or the lifetime of the organ. There is little research on the size limit of the lesion that causes changes in the parameters of product quality. The objective of this study was to evaluate the effect of lesion size in the firmness of tomatoes during storage at room temperature. Was used healthy tomatoes variety pizzadoro with 90% of the area with the color red, which were selected by the absence of defects and sanitized with sodium hypochlorite, 20 mg/L. Then the fruits were divided into lots (six treatments and control) and each tomato was subjected to a lesion in the equatorial region, with a cylindrical object of stainless steel to a depth of 5mm. The lesions had the following diameters: 0.4 mm, 0.8 mm, 1.5 mm, 3.5 mm, 6.5 mm and 12.2 mm. Firmness was measured by the method flattening where the flattened area was measured under a constant force. Measures started one hour after injury and were conducted daily, always in the equatorial region of the fruit, during eight days were stored at 25 ± 3 °C. Was used a randomized split plot with two replications and experimental units of two fruits, which were submitted to analysis of variance. The treatment means were submitted to regression analysis and comparison made by the Tukey test (** < 0.01). It was found that fruit firmness decreased during storage and the rate of decay of firmness is more pronounced in fruits that have suffered injuries larger (6.5 mm and 12.2 mm).

S13.336

General and Specific Combining Ability Diallel Crossing of Four Pepper Lineages

De Mesquita, J. C. P.; Menezes, D.; Resende, L. V.; Mendes, A. Q.; Magalhães, A. G.

UFRPE - UNIVERSIDADE FEDERAL RURAL DE PERNAMBUCO, AV. DOM MANOEL DE MEDEIROS, S/N, 52171-900, RECIFE, BRAZIL

The experiment was realized in greenhouse, at the Agronomy Department, fitotecnic area of Federal Rural de Pernambuco (UFRPE) in Recife-PE, Brazil. Four pepper lineages (*Capsicum annuum* L.) HTV-1, HTV-2, HTV-3 and HTV-4 were used in diallel crossings system of 4x4 balanced with parents and F1s. The objective was to analyze general capacity (GCC) and specific capacity (SCC) of combination. Ten production characters were evaluated and differences about CGC and CEC were observed. The CGC and CEC of 23 diallelic analysis demonstrated additive genetic effects predominance to most of the evaluated characters. The lineages HTV-2 and HTV-4 presented positive values of g_i for the precocious weight production as for the total weight of fruits, and can be included in breeding programs to production improvement. The hybrid combinations HTV-1 x HTV-2 and HTV-3 x HTV-4 showed the best contributions in precocious weight and total fruit weight.

S13.337

Genetic Divergence and Combination Ability of Sweet Pepper Lines

Mendes, A. Q.¹; Menezes, D.¹; Resende, L. V.²; Silva, C. D.¹; da Costa, J. C.¹; Santos, F. L.¹; de Mesquita, J. C. P.³

¹UFRPE, UNIVERSIDADE FEDERAL RURAL DE PERNAMBUCO, AV. DOM MANOEL DE MEDEIROS, S/N, 52171-900, RECIFE, BRAZIL

²UFPA

³IPA

The objective this study was to check the genetic divergence by ISSR and evaluate the combining ability of six sweet pepper lines. The experiment was realized at the Agronomy department of the Universidade Federal Rural de Pernambuco, Brazil (UFRPE) used six sweet pepper lines: HTV-1, HTV-8, HTV-9, HTV-10, HTV-11 and HTV-12. Was made a partial diallel cross among lines and determined the general (CGC) and specific combining (CEC) for eight agronomic traits. Through the molecular data obtained, a dendrogram was generated, which was formed three groups and one of these two subgroups, the linkages HTV-8, HTV-10, HTV-11 and HTV-12 form the first group. The second and third groups were made by only lines HTV-1 and HTV-9, respectively. When combined the HTV-9 with the HTV-11, had the largest dissimilarity (20.31%). The average of fragments amplified per primer was 6.90 and the size of these fragments ranged from 300 bp (UBC 02, UBC 808, UBC 810 and UBC 812) to 1500 bp (UBC 881). Hybrid combinations HTV-8 x HTV-10 e HTV-11 x HTV-12 provided the best contributions to the total weight of fruit and average weight of fruit. There were some inconsistencies between the molecular results with the results of combining ability, where the prediction by means of ISSR molecular marker showed low precision and should not indicated, this study, to assist the conventional breeding.