

of temperature below 7.2 °C per cycle. When it was introduced in low latitudes, such as 26 ± 2 ° S, the peach tree had to be adapted to the prevailing subtropical climate. The adaptability of peach at different environmental conditions worldwide is due to genetic selection of improved cultivars, both with low or high chilling requirement. In Brazil, more precisely in the state of Santa Catarina, the Institute for Agricultural Research (Epagri) is developing a breeding program to achieve cultivars adapted to humid subtropical climate at Urussanga Research Station. Features such as low chilling demand, fruit quality and productivity have been the subject for over 10 years of breeding. Parent varieties are from the Campinas Agronomic Institute (IAC), Brazil, the Brazilian Agricultural Research Enterprise (Embrapa), Brazil, and the University of Florida. Among the strategies of the improvement program, Epagri includes the participatory research at farms with a history of peach production. Results show several selections with high productivity, large fruit size, low acidity, firm and white pulp. The program also aims to select clones with maturity between 01 October and 20 December, which is out of the harvest season in temperate regions. Some genotypes already selected presented cycles between 70 and 120 days from flowering to harvest.

T09.211

Mango Strategies to Develop New Varieties to the Brazilian Tropical Semi-Arid Region

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Mango is one of the most important fruit crop in the Brazilian Tropical Semi-Arid region. The cultivar Tommy Atkins has been grown in 85% of an estimated area of 30,000 hectares dedicated to this crop. This situation could have a negative impact on the Brazilian mango agribusiness, considering changes in overseas consumer preferences or a severe infestation of a specific pest or disease. The goal of this research was to evaluate strategies to reduce the juvenile period and to replace the laborious hand pollinization in order to accelerate the development of new mango cultivars to the region. Isolated plants of 'Haden' and 'Espada' were identified within commercial orchards established with "Tommy Atkins" in a farm dedicated to export mangoes in Petrolina, PE, Brazil, assuming that mango is a cross-pollinated species, with crossing rate around 70%. Seedlings with six months old were transplanted to field. Floral and fruit setting were accomplished with pruning, irrigation management, application of paclobutrazol and potassium nitrate. DNA extracted from progenies and parental was analyzed with *Mangifera indica* published microsatellites. The combined management was efficient to induce flowering and fruit setting in, approximately, 70% of the progenies, after two year and half of field establishment. Among ninety-four individuals analyzed with three microsatellites 83% were identified as true hybrids of 'Haden' × 'T. Atkins'. Among four hundred and one individuals analyzed with only one microsatellite 10% were identified as true hybrids of 'Espada' × 'T. Atkins'. The lowest hybrid percentage was due, probably, the absence of flowering synchronism between 'Espada' and 'T. Atkins'. The adopted strategies were efficient to reduce the juvenile period and the laborious hand crossing in mango. It was estimated that the development of new mango cultivars could be accomplished with eight to ten years of work, including the complex multilocation agronomic evaluations.

T09.212

Lujia 5 - A New Columnar Apple Variety for Juice Concentrated

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Lujia 5 was hybridized with Telamon × Fuji by Qingdao Agricultural University in 1995. It was patented, CNA20040065.7, by the Chinese Committee of Agricultural Plant Variety Protection in 2006. Its growing habit is columnar type. The fruit grows 150 days, and it can be harvested at late September in Qingdao area of China. The characters of Lujia 5 fruit can be described as follow. Fruit shape is egg round. Fruit weighs 178 g averagely. Fruit color shows green or red slightly-

covered. Flesh texture is crisp. Rate of juice output reaches 79.4%. Flesh firmness equals to 9.5 Kg/cm². Flesh flavor tastes extremely sour. Soluble solids content of raw juice is 12.4%. Acid content of raw juice is as high as 0.81%, and its acid content of concentrated juice (SS content 70 °Brix) is 4.50%. Whereas the acid content of raw juice of Judaine, the control variety, is 0.36% and its acid content of concentrated juice is 3.19%. Transparence rate of raw juice of Lujia 5 (T625, 10 °Brix) is 98.8%, and its absorption value of raw juice (A420, 10 °Brix) is 0.054. At the end of 5 months conservation at 26 °C, transparence rate decreases to 94.6%, and its absorption value increases to 0.195. The results shows that raw juice and concentrated juice of Lujia 5 are stable, clear, and almost no browning. Lujia 5 tree grows in moderate vigorous, and shows high and stable yield, high resistance to diseases and insect pests. Lujia 5 is one of the first columnar apple varieties suitable for apple juice concentrated so far, which were bred by Qingdao Agricultural University. It has been cultivating in apple production in China. It shows prosperous future.

T09.213

Correlation between Net Melon Characters

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This study aimed to estimate the genotypic, phenotypic and environment correlations, between 21 net melon characters. The experimental design adopted was a randomized block design with three repetitions. The treatments consisted of 38 net melon genotypes, of which six lines, 15 hybrids, 15 reciprocal hybrids and two commercial cultivars. The characters evaluated were: total production; mass of fruit; average transverse and longitudinal diameter of fruit and locule; index format of fruit and locule; mesocarp thickness; epicarp thickness; fruit shape index; average diameter of insertion fruits stalk; peeling of seeds; precocity; harvest concentration; soluble solids; tritritable acidity; pH; maturation index; vitamin C; and, firmness of fruit. The estimate of genotypic, phenotypic and environment correlations coefficients were calculated with basis in the 21 characteristics studied. It was noted, for majority pairs evaluated, values of rg and rf with same sign, except eight. The most part of pairs studied have similar coefficients values of rg and rf. The genetic correlations were higher than phenotypic in 89.53%, and these were higher than the environmental correlations in 83.81%.

T09.214

Stone Fruit Breeding Program: Creating New Varieties for the Chilean Export Industry

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Chilean fruticulture has experienced deep transformations during the last decades, passing from an internal market oriented activity to an export industry. As a result of this process, the fruit producing sector has gradually constituted into one of the pillars of agriculture and of the economic development of Chile, leading the country to position itself as a worldwide leader in the fresh fruit industry. In the particular case of stone fruits, Chile occupies the first and the fifth place as plum and peach exporter, respectively. Although the positioning of the export industry for both species is still of relevance, a continuous competitiveness loss in the international markets has occurred as a result of the use of inadequate varieties for the Chilean productive reality, to the increasing difficulty to access new varieties and the lack of breeding programs that aim to develop varieties adapted to the specific requirements of the Chilean industry. Therefore, the commercial projection of the industry demands to count with varieties that produce good quality fruit (size,