221.

EFFECT OF TIME ON THERMALLY TREATED HONEY

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Quality parameters are altered when pasteurizing and liquefying honey, depending on crystallization, temperature and extent of treatment. Two tests comprising seven repetitions each were performed: T1 analyzed for: humidity, acidity, HMF, color and crystallization degree, before a 70ºC thermal treatment and T2, same as T1 after the treatment. Total fluidification time was controlled. Statistical analysis to relate differences in parameters before and after tests respect of time followed Sperman's Rank Correlation Test (p<0.05). The difference between values before and after the thermal treatment is the new variable. Results show non significant differences and reverse relation in acidity (r = -0.25; p = 0.54), color and HMF (r = -0.71; p = 0.08). Humidity (r = 0.38; p = 0.34) and absorbance (r = 0.42; p = 0.29) showed non significant differences and direct relation respect of time. The pH-time rate shows negatively (r = -0.82; p = 0.044) and correlates close to significance. Conclusion: color and HMF show a high degree of inverse association between them and time. Although r is below significance, these parameters stop increasing as time is increased. Acidity, absorbance and humidity showed no significant variation. The time-pH relation is stronger, differences decrease as time is increased

222.

DETERMINATION OF NUTRIENTS IN WOOD and BARK OF CLONES OF POPULUS SPP IN SANTA FE PROVINCE, ARGENTINA

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The Populus genera is widely spread in Argentina and the world, for its adaptability and uses. For sustainable systems to be possible with intensive wood extraction, should maintain or improve the soils nutricional levels. Diverse genetic materials could represent different levels of exportation. The objective of this work is to determine the concentration of some nutrients (wood/bark) of different clones. Samples of wood to 1.30 m of height were extracted of 10 clones (5 trees/clone) of intraspecific crossovers of P. interspecific deltoids and of P. deltoid x installed P. nigra in a test of 9 years of age, in Teodelina (34° 09´ LS; 61° 15´ W), Santa Fe, Argentina. The concentration of P, K, Ca and Mg was determined by dry digestion and colorimetric evaluation for P, flame photometry for K and complexometric for Ca and Mg. The average values obtained for bark and wood were for P (0.05 and 0,01%), Ca (1.30 and 0.92%); K (0.46 and 0.32%) and Mg (0.45 and 0.05%), respectively. The wood showed lower concentrations of nutrients than the bark in all the cases. Significant differences for almost all the elements were founded between clones, which would demonstrate genetic differences of its vegetal nutrition. This establishes a departure point to estimate extraction during the harvest; constituting this topic as a selection element of genetic materials and allowing to determine the restitutive fertilization dose, for the promotion of sustainable production systems.

223.

COMPLEMENTATION OF STUDENTS DE F.A.Z.-U.N.T. FORMATION WITH PRACTICAL EDUCATIONAL AND OF HORTICULTURAL PRODUCTION IN THE AGRICULTURAL HOME SAN AUGUSTINE: 1ª STAGE OF EVALUATION

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The FAZ-UNT and the HASA develop tasks of teaching jointly. In this mark, FAZ has as objective the complementation of the formation of its degree students with practical extra-rooms of education and horticultural production. HASA work in the formation of poor children to integrate them to the society. The students make use of the properties of the HASA -1,5 has and they conditioned the floor for installation of cultivations, prepared substrates for sows, to carried out direct sowings in land and in trays, transplant to field, and conditioning of the greenhouse for the protected vegetables . In this 1ª work stage 15 students integrated the theory with the practice; it increased their capacity to act in new situations in order to identify, to outline and to solve problem, important for their professional future.

224.

MODIOLASTRUM MALVIFOLIUM (GRISEB) K. SCHUM. ANATOMICAL FEATURES

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Root transversal sections reveal a peridermis of 3 suber cell layers and a limited felodermis. The cortical parenchyma is small related with the vascular cylinder (vc). It shows abundant starch granules, clustered crystals and mucilage-cells. Vascular bundles isolated by medullar-rays containing clustered crystal are observed in the vc. They continue toward the cortex with fiber groups, while parenchyma medullar-rays face mucilage-cells. The stem shows a clear difference between cortex and vascular cylinder, where the medulla reaches a big development. Epidermis exhibit a hairy covering of stellate and glandular hairs. Sub-laying these tissues a chlorophyllic parenchyma and an angular collenchyma are observed. The cortical parenchyma is featured by 3 cell layers and contains clustered crystals and few starch granules. Schlerenchymatic fibers of vascular cylinder are continuous or isolated by parenchymatic cells. Phloem and xylem are collateral and form a continuous ring. Mucilage-cells are also present in the medullar parenchyma. The leaves shows a palisade and a spongy parenchyma. Lower and upper epidermis have stellate and glandular hairs The main nerve shows few collenchyma cells. Mucilage-cells are also present in this structure.