97.

MICROSTRUCTURE OF ANTERIOR TEETH ENAMEL

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The aim of this work was to compare enamel types in human anterior teeth using longitudinal cuts (Lc) and cross cuts (Cc) of upper incisors and canines. Two hemisections were obtained from each piece, embedded in epoxy resin, grinded, etched with acid, metallized and observed under SEM. Micrographs were obtained from the incisal, medial and cervical thirds such as vestibular and lingual faces in Lc and vestibular and palatine faces in Cc. In the Lc samples, both in incisors and in canines, there was enamel with Hunter Schreger bands (HSB) in the vestibular face in the incisal and medial thirds, decreasing towards the cervical third. Differences in HSB thickness in the enamel were found, this being higher in the incisors group. On the outer surface radial enamel type was found. In the cervical zone there was a predominance of irregular enamel with prism intercrosses that did not quite form bands, this being more evident in canines. In the three thirds of the incisors, lingual face HSB in the inner zone and radial enamel in the rest could be observed. In the cervical third the enamel was irregular, with prism intercrosses. In both groups in Cc, striae of Retzius were described. In the inner zone the enamel was irregular and prisms were observed in the transverse and oblique sections. In the external zone, the enamel was radial and prisms met the surface in a perpendicular way. The microstructure of both groups showed no significant differences although, as a consequence of their functional adaptation, the impact zones of occlusal forces showed a higher proportion of enamel with bands.

98.

SUGAR CANE JUICE CLARIFICATION WITH A NON-CONVENTIONAL METHOD

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Juice clarification assays were performed by addition of equal doses of anionic polyacrilamide (trade name, AP 273) and cationic polyacrilamide (trade name, FC 2763) under the effect of temperature.

Procedure: 100 ml of juice sample were collected consecutively and heated at temperatures of 70 and 85°C. Then the cationic polyacrilamide and after 15–20 sec the anionic polyacrilamide were added. The mixture was allowed to rest for 3 min (the doses were the following: 1, 2, 4, 6, 8 & 10 ppm of each polyacrilamide).

Then, the mixture was filtered through a common filter paper and °Bx was measured with a refractometer. A dilution was made to obtain a solution of 1°Bx, which was then vacuum filtered with a filter of standardized pores. The clarified liquid was taken to pH 7.00 ± 0.05 and its absorbance was measured in a spectrophotometer at 420 nm.

Conclusion: with higher temperature and more doses, the Icumsa color range diminished compared to the industrial juice.

99.

OXIDATION VELOCITY OF TWO SOURCES OF SULFUR

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In recent years there has been widespread use of sulfur (S) as a fertilizer in different crops, whose assimilable form is sulfate (SO4.) The purpose of this study was to evaluate the rate of oxidation of elemental sulfur applied to the soil in two commercial formulations, powdered sulfur and sulfur granules, both presentations having an S content of 98%. A soil sample from Simoca, Province of Tucumán, was used for the experiment.

The test consisted of two treatments, T1 (powdered sulfur), T2 (sulfur granules), each with five repetitions, and an untreated control, which were placed in plastic pots containing 1kg of soil air-dried and sifted with a 2 mm mesh. In each pot, 2 g. sulfur spray for T1 and 2 g of sulfur granules for T2 were applied, with a sufficient amount of distilled water to bring the soil to field capacity. The pots were then placed in an oven at $30^{\circ}C \pm 2^{\circ}C$. Every two days, the missing water was replaced to maintain the soil at field capacity. At 7, 14, 30, 60, 90, 120 and 150 days of incubation, soil samples were taken from each pot and the amount of SO4 present was determined by the turbidimetric method.

We concluded that sulfur powder was oxidized faster than sulfur granules and that after 90 days of incubation the values of SO4 were almost equal, this being in agreement with what was expected: sulfur powder has a greater amount of the specific element than granules and is much more rapidly oxidized by sulfooxidant soil bacteria.

100.

POTENTIAL "PROBLEM WEEDS" IN SOYBEAN ROTA-TION CROPS IN TUCUMÁN. 2ND PART

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Weed control is never fully successful. The weeds that resist controls compete against the crop or cause different problems. There are three parts: 1) "successful weeds": they reach their life cycle in the crop (De Marco et al., 2007). 2) They increase their density, becoming "emergent importance weeds" (Roncaglia et al., 2005). 3) "problem weeds", which resist control treatments. The success of these species is due to their capacity for survival against chemicals and cultural practices. Emergent importance weeds found in soybean-wheat crops of eastern Tucumán (Roncaglia et al., 2005) include Amaranthus quitensis, Sphaeralcea bonariensis, Talinum paniculatum, Leptochloa virgata and Bromus catharticus (De Marco et al., 2007). The aim of this report is to determine the percentages at which potential problem weeds are found after three soybean-wheat years. A sampling was made between the 2005-2008 campaigns in a 3000 Ha. field called Los Aluxes. Percentages were defined according to each lot: Sphaeralcea bonariensis: 83%; Amaranthus quitensis: 37%; Verbena bonariensis: 21%; Trichloris crinita: 18%; Heliotropium procumbens: 16%; Portulaca oleracea: 17%; and Euphorbia prostata:11%. On the basis of the above results, weed control is suggested to lessen the propagules in the seeds bank.