

CHARACTERIZATION OF THE MINERAL COMPOSITION OF PEARS OF THE PORTUGUESE CULTIVAR 'ROCHA'

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Abstract:

Knowledge of the nutrient levels of fruits, associated with leaf analyses, allows one to diagnose the nutritional status of the orchard and to propose adequate levels of fertilization in order to minimize the occurrence of physiological disorders during storage. During thirteen years (from 1994 to 2006), the nutritional status of several pear orchards of the cultivar 'Rocha', located in the Portuguese Region of Oeste, was evaluated. The aim of the study was to establish the main internal quality parameters of pears, of the cultivar 'Rocha', at harvest, as related to their mineral composition, as a first step to establishing a service of fruit analysis providing advice on the storability of the fruits. The orchards were installed in different soil types, with variable textures and pH, low to medium organic matter, medium to high cationic exchange capacity and medium to high contents of available phosphorus and potassium. Thirteen trees were randomly selected at each one of the orchards, in order to take fruit samples. Total yield and its distribution according to fruit size were recorded from each tree, and a weighted sample of fruits according to size was analysed. The analysis was performed using the chemical methods in use at the Portuguese Agrochemical Laboratory *Rebello da Silva*. The mineral composition of the fruits, and some quality parameters (total soluble contents of the fruits, titratable acidity and pulp firmness) are presented, according to their distribution by fruit size. Total soluble solids were significantly correlated with fruit phosphorus, potassium and zinc contents, whereas titratable acidity was significantly correlated with fruit potassium. Regarding the firmness of the pulp, no significant correlations were found.