

NITROGEN AND BORON FERTILIZATION OF PEAR ORCHARDS OF THE PORTUGUESE CULTIVAR 'ROCHA'

P.V. Jordão, F. Calouro, L. Duarte

Keywords: fertilization, fruit quality parameters, pear tree, *Pyrus communis* L., yield

Abstract:

The efficiency of fertilizer applications to the soil depends on its capacity to supply the nutrients to the plants which is influenced by soil moisture content and the accomplishment of the recommended management practices. During seven years, two field experiments were carried out in the Portuguese Region of Oeste, in order to evaluate the effect of nitrogen and boron fertilization on the yield and some internal fruit quality parameters (titratable acidity and total soluble solids), at harvest, of Portuguese pear trees, of the cv. Rocha. The experiments (EF2 and EF3) were installed at two mature orchards located on a Eutric Fluvisol and Chromic Cambisol, respectively. EF2 was irrigated, although with low levels of irrigation, and EF3 was not irrigated. Nitrogen (0 to 200 kg ha⁻¹) and boron (0 and 1.8 kg ha⁻¹) were applied annually, from 1993 to 1999. In both orchards, the applications of 50 kg ha⁻¹ of nitrogen with 1.8 kg ha⁻¹ of boron led to the highest yields of marketable fruits (50 to 75 mm of equatorial size). Regarding the internal quality parameters of the fruits, both titratable acidity and total soluble solids were affected by the applied fertilization, though within the adequate range values for the cultivar 'Rocha', particularly in EF3. The effect of the fertilization on the controlled parameters was dependent on the management practices and climatic conditions throughout the experimental period.