

Title Evaluation of 10 pesticide residues in oranges and tangerines from Valencia (Spain)
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Abstract

One hundred and sixteen orange and tangerine samples from an agricultural cooperative of the Valencian Community (Spain) were analyzed for bitertanol, carbendazim, hexythiazox, imazalil, imidacloprid, methidathion, methiocarb, pyriproxyfen, thiabendazole, and trichlorfon by liquid chromatography–mass spectrometry (LC–MS) after a conventional multiresidue extraction procedure. Of 52 samples that contained pesticide residues, carbendazim was detected in 27 (51.9%) in the concentration range of 0.02–0.04 mg kg⁻¹, hexythiazox in 22 (42.3%) in the concentration range of 0.02–0.05 mg kg⁻¹, imazalil in 8 (15.0%) in the concentration range of 0.02–1.2 mg kg⁻¹, imidacloprid in 5 (9.6%) in a concentration range of 0.02–0.07 mg kg⁻¹, methidathion in 17 (32.6%) in the concentration range of 0.06–1.3 mg kg⁻¹, and methiocarb in 1 (2%) at a concentration of 0.02 mg kg⁻¹. Bitertanol, pyriproxyfen, thiabendazole and trichlorfon were not detected in any sample. Although 19 samples contained residues of two or three of the studied pesticides, no sample exceeded the European Maximum Residue Limits (MRLs). The results show that despite a high occurrence of pesticide residues in oranges and tangerines from Valencian Community, the contamination levels of these residues could not be considered a serious public health problem according to European Union (EU) regulations.