

Title Post harvest patterns of deltamethrine and nitrates in industrial spinach
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Abstract

Spinach is the most important leafy vegetable for processing. Pesticide and nitrate residues represent important quality factors, and are constantly monitored during processing, within the HACCP control system. Deltamethrine is frequently used for pest control, because of its wide range of action and short safety time, allowing spraying within few days before harvest. In this experience, the content of nitrates and Deltamethrine after each of the three processing phases: unloading (harvest), washing and blanching, for three winter-spring growing cycles in the Romagna plain (northern Italy) are reported. Dry matter significantly decreased during washing, as a result of tissue hydration. On the other hand, a new increase of dry matter was determined by blanching. Deltamethrine concentration, on a fresh matter basis, substantially decreased with washing and raised again after blanching. On a dry weight basis, a further reduction of concentration was observed after blanching, with respect to the washing phase. Washing reduced nitrate concentration, to a higher amount than what expected from a simple dilution effect due to hydration. The role of processing on the reduction of potentially hazardous residuals is clear, but the quantification of the involved processes needs further investigation.