Title Influence of the combination of different atmospheres on diphenylamine, folpet and imazalil content in cold-stored 'Pink Lady®' apples

Author C. Villatoro, M.L. López, G. Echeverría, J. Graell and I. Lara

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Abstract

'Pink Lady®' apples were harvested at commercial maturity, treated with three different agrochemical products, and stored at 1 °C under either air or controlled atmosphere conditions (2 kPa O_2 + 2 kPa CO_2 and 1 kPa O_2 + 1 kPa CO_2) for 13 and 27 weeks, followed by 4 weeks storage in air at 1 °C. Diphenylamine, folpet and imazalil contents in both the skin and flesh were simultaneously determined after cold storage plus simulated marketing periods of 1 and 7 d at 20 °C. After 27 weeks plus 7 d, diphenylamine and folpet levels in apple skin were lower for fruit stored in low O_2 (2 kPa) or air than for those kept under ultra-low O_2 (1 kPa). An additional storage period of 4 weeks in air reduced diphenylamine and folpet contents in whole apples stored for 13 weeks in the low O_2 controlled atmosphere. For imazalil, the same result was obtained in apple skins stored for 27 weeks under an ultra-low O_2 controlled atmosphere. Differences in diphenylamine and folpet contents were found for skin and flesh samples throughout the simulated marketing period, but there were observable differences in imazalil contents only for flesh samples.