Accepted Manuscript

Decontamination of fresh-cut broccoli with a water–assisted UV-C technology and its combination with peroxyacetic acid

Cyrelys Collazo, Tomás Lafarga, Ingrid Aguiló-Aguayo, Jesús Marín-Sáez, Maribel Abadias, Inmaculada Viñas

PII:	S0956-7135(18)30279-2
DOI:	10.1016/j.foodcont.2018.05.046
Reference:	JFCO 6170
To appear in:	*Food Control*
Received Date:	08 April 2018
Accepted Date:	29 May 2018

Please cite this article as: Cyrelys Collazo, Tomás Lafarga, Ingrid Aguiló-Aguayo, Jesús Marín-Sáez, Maribel Abadias, Inmaculada Viñas, Decontamination of fresh-cut broccoli with a water–assisted UV-C technology and its combination with peroxyacetic acid, *Food Control* (2018), doi: 10.1016/j.foodcont.2018.05.046

Decontamination of fresh-cut broccoli with a water–assisted UV-C technology and its combination with peroxyacetic acid

Cyrelys Collazo[a], Tomás Lafarga[b], Ingrid Aguiló-Aguayo[b], Jesús Marín-Sáez[c], Maribel Abadias[b], Inmaculada Viñas[a]

[a] Food Technology Department, University of Lleida, XaRTA-Postharvest, Agrotecnio Center, Rovira Roure 191, 25198 Lleida, Catalonia, Spain

[b] Institut de Recerca i Tecnología Agroalimentaries, XaRTA-Postharvest, Edifici Fruitcentre, Parc Científic i Tecnològic Agroalimentari de Lleida, Parc de Gardeny, 25003, Lleida, Catalonia, Spain

[c] Department of Chemistry and Physics, Research Centre for Agricultural and Food Biotechnology (BITAL), University of Almería, Agrifood Campus of International Excellence, ceiA3, E-04120, Almería, Spain.

Corresponding author: ivinas@tecal.udl.cat

Highlights

- 0.5 kJ/m^2 reduced mesophilic bacteria by 2 log$_{10}$ in fresh-cut conventional broccoli
- 0.3 kJ/m^2 + 50 mg/L peracetic acid reduced mesophils by 2 log$_{10}$ in organic broccoli
- WUV reduced the microbial load in the water wash to undetectable levels
- WUV processing enhanced the sulforaphane content in fresh-cut broccoli

Abstract

The effectiveness of a water-assisted UV-C (WUV) technology for the decontamination of fresh-cut broccoli from conventional and organic agricultural practices was evaluated as an