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Communication

The effect of high pressure processing on polyphenol oxidase activity, phytochemicals and proximate composition of Irish potato cultivars

Konstantina Tsikrika¹, Nora O'Brien², and Dilip K. Rai^{1*}

¹Department of Food Biosciences, Teagasc Food Research Centre, Ashtown, Dublin, D15 KN3K, Ireland; Konstantina.tsikrika@teagasc.ie

²School of Food & Nutritional Sciences, University College Cork, College Road, Cork T12 K8AF, Ireland; nob@ucc.ie

* Correspondence: dilip.raai@teagasc.ie ; Tel.: +353-1-8059500 (D.K.R)

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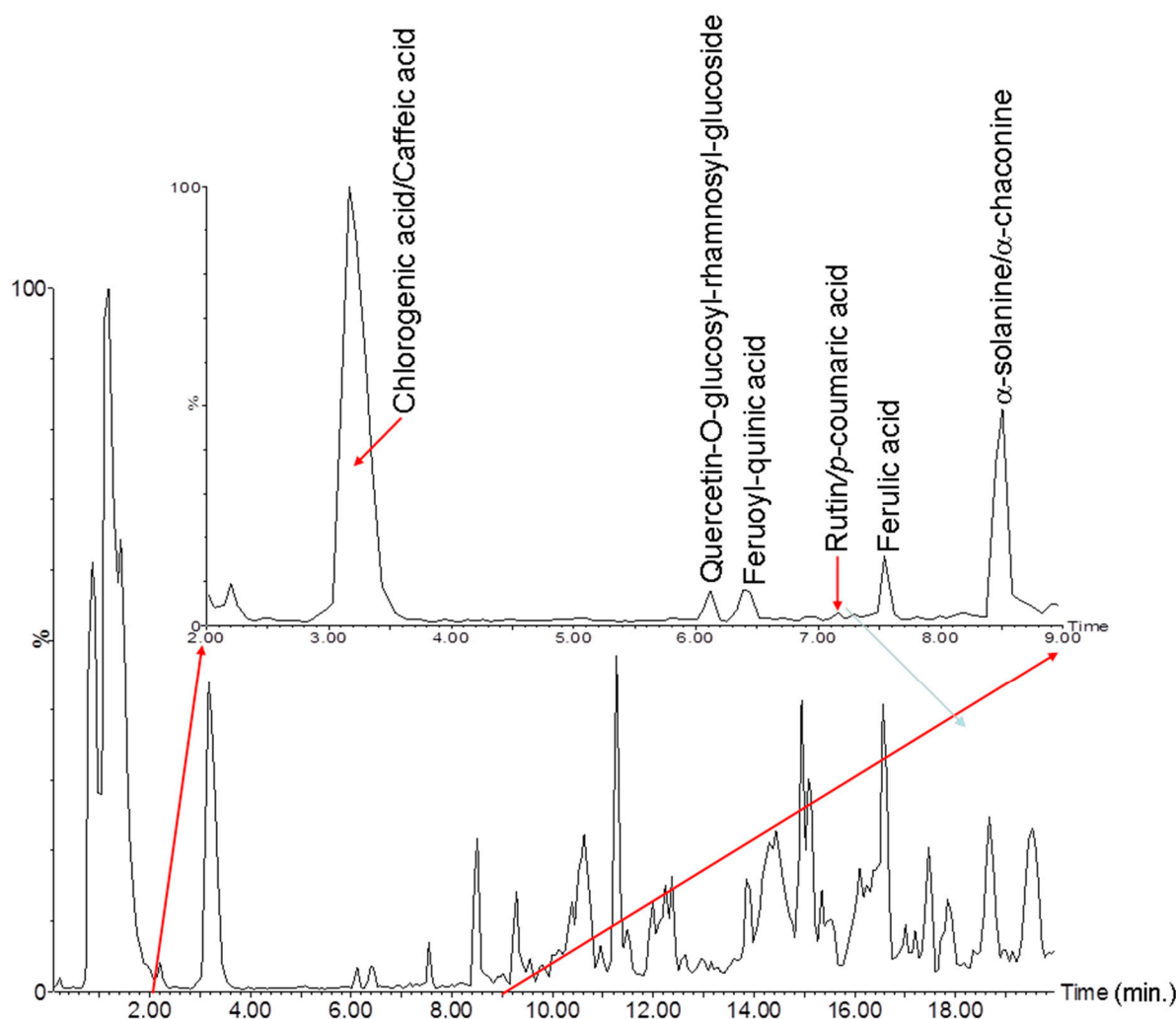


Figure S1: HPLC-Q-ToF-MS profiling of the phytochemicals in the potato (Saxon) extract. Shown in the inset is the LC chromatogram where the polyphenols and glycoalkaloids elute between 2-9 minutes.

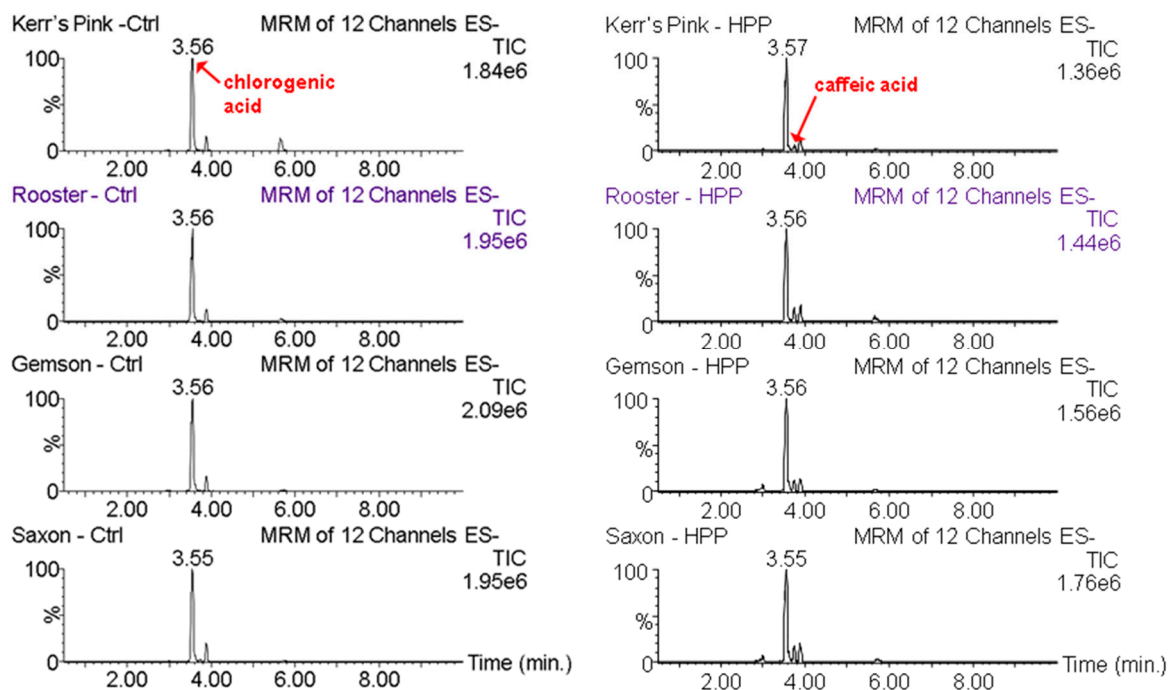


Figure S2: UPLC-TQD-MS quantification of polyphenols in the different potato cultivars prior to (left column) and post-HPP (right column). As evident from the total ion chromatograms (TIC) that chlorogenic acid is the most abundant polyphenol in potatoes, which is reduced in the post-HPP samples with an increase in caffeic acid.

Table S1. Tentative identification of phytochemicals from the potato (Saxon) extract using accurate mass measurement and MS/MS fragment ions

| RT (min.) | Observed [M-H] ⁻ (m/z) | Calculated [M-H] ⁻ (m/z) | Molecular formula | MS/MS ions (m/z) | Tentative Identification |
|-----------|-----------------------------------|-------------------------------------|---|------------------------|--|
| 0.88 | 158.9764 | 158.9752 | C ₅ H ₄ O ₄ S | 130.99, 115.00 | Dihydroxythiophene-carboxylic acid |
| 0.98 | 191.0541 | 191.0556 | C ₇ H ₁₂ O ₆ | 147.05 | Quinic acid |
| 2.17 | 203.8050 | 203.0821 | C ₁₁ H ₁₂ N ₂ O ₂ | 159.09 | Tryptophan |
| 3.17 | 353.0858 | 353.0873 | C ₁₆ H ₁₈ O ₉ | 191.08, 173.06, 135.06 | Chlorogenic acid |
| 3.46 | 179.0341 | 179.0344 | C ₉ H ₈ O ₄ | 135.04 | Caffeic acid |
| 6.12 | 771.1978 | 771.1984 | C ₃₃ H ₄₀ O ₂₁ | 300.03 | Quercetin-O-glucosyl-rhamnosyl-glucoside |
| 6.39 | 367.1015 | 367.1029 | C ₁₇ H ₂₀ O ₉ | 193.04, 191.05, 173.05 | Feruoyl-quinic acid |
| 6.44 | 625.1384 | 625.1405 | C ₂₇ H ₃₀ O ₁₇ | 300.03, 191.05 | Quercetin- O-di-glucoside |
| 7.16 | 609.1442 | 609.1456 | C ₂₇ H ₃₀ O ₁₆ | 301.03 | Rutin |
| 7.19 | 163.0387 | 163.0395 | C ₉ H ₈ O ₃ | 119.05 | <i>p</i> -coumaric acid |
| 7.51 | 193.0488 | 193.0501 | C ₁₀ H ₁₀ O ₄ | 134.04, 117.04 | Ferulic acid |
| 8.42 | 866.4885 | 866.4902 | C ₄₅ H ₇₃ NO ₁₅ | 704.51, 701.32, 558.47 | α -solanine |
| 8.48 | 850.4915 | 850.4953 | C ₄₅ H ₇₃ NO ₁₄ | 704.41, 422.14 | α -chaconine |



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