

Comparison of the effects of High Pressure Processing and Thermal Processing in fruit and vegetable juices

FOOD SYSTEM	HPP	THERMAL PROCESSING	RESULTS	REFERENCES
Asparagus	200-600 MPa 10-20 min	121 °C 3 min	<ul style="list-style-type: none"> • Day 0. HPP better retention of ascorbic acid, phenolics and aromatic compounds, which contributed to a higher antioxidant capacity. 	(Chen et al. 2015b)
Carmbola	600 MPa 2.5 min	110 °C 8.6 s	<ul style="list-style-type: none"> • Day 0. HPP higher antioxidant capacity and better retention of phenolics, ascorbic acid, and sensory attributes. • Day 35. HPP better retention of previously enlisted properties, and higher flavonols retention. 	(Huang et al. 2018)
Cucumber	500 MPa 2 min	85 °C 15 s	<ul style="list-style-type: none"> • HPP enhanced chlorophyll retention and sensory attributes. 	(Zhao et al. 2013)
Grape	300-600 MPa 3 min 20 °C	90 °C 60 s	<ul style="list-style-type: none"> • Day 0. HPP resulted in better sensory attributes. No differences observed in anthocyanin and phenolics content. • Day 20. HPP higher antioxidant capacity and better sensory attributes. No differences observed for anthocyanin and phenolics content. 	(Chang et al. 2017)
Orange	550 MPa 70 s 18 °C	70 °C 30 s	<ul style="list-style-type: none"> • Day 0. HPP higher antioxidant capacity, better retention of phenolics, anthocyanins, and carotenoids. No observed differences in flavonoid content. • Day 35. HPP better retention of previously enlisted attributes, except for flavonoids. 	(Vieira et al. 2018)
Papaya	350-650 MPa 5-10 min 20 °C	110 °C 8.6 s	<ul style="list-style-type: none"> • Day 0. Thermal processing induced color changes, in addition to loss of antioxidant capacity and phenolics. • Day 40. HPP displayed higher antioxidant capacity, and better retention of color, phenolics, and sensory quality. 	(Chen et al. 2015a)
Pear	500 MPa 10 min	110 °C 8.6 s	<ul style="list-style-type: none"> • Day 0. HPP higher antioxidant capacity, better retention of ascorbic acid and phenolics. • Day 56. TP and HPP equal ascorbic acid content, whereas HPP resulted in higher antioxidant capacity. 	(Zhao et al. 2016)
Pepper (red) and orange	550 MPa 5 min	110 °C 8.6 s	<ul style="list-style-type: none"> • Day 0. HPP higher antioxidant capacity, better retention of ascorbic acid, phenolics and sensory attributes. • Day 56. TP and HPP with equal ascorbic acid content. HPP better retention of antioxidant capacity, phenolics, and sensory attributes. 	(Xu et al. 2015)
Prickly pear	600 MPa 5 min 15 °C	95 °C 3 min	<ul style="list-style-type: none"> • Day 0. TP and HPP equal flavonols and betacyanins content, whereas HPP yielded better retention of ascorbic acid. 	(Moussa-Ayoub et al. 2017)

FOOD SYSTEM	HPP	THERMAL PROCESSING	RESULTS	REFERENCES
Strawberry	300-500 MPa 1-15 min 0 °C	90 °C 15 min	<ul style="list-style-type: none"> • Day 0. HPP higher antioxidant capacity, and better retention of anthocyanins, ascorbic acid and sensory attributes. 	(Marszałek et al. 2015)
Sweet potato	600 MPa 2.5 min	110 °C 8.6 s	<ul style="list-style-type: none"> • No observed differences in phenolics, anthocyanin and antioxidant capacity. 	(Wang et al. 2012)

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