

Table S1. Microorganisms number during 15 minutes ozonation process with different ozone concentration ( 0.5 mg L<sup>-1</sup> and 1.5 mg L<sup>-1</sup>)

Microorganisms from parsley	microorganisms number [CFU ml <sup>-1</sup> ] during process time [min]; R: reduction of microorganisms number [%]										
	before		after ozonation								
	0 min	1 min		3 min		5 min		10 min		15 min	
		0.5	1.5	0.5	1.5	0.5	1.5	0.5	1.5	0.5	1.5
<i>Pseudomonas fluorescens</i>	2.0×10 <sup>9</sup> ±9.6×10 <sup>8</sup> R:na	4.4×10 <sup>9</sup> ±3.4×10 <sup>9</sup> R:nr	7.4×10 <sup>8</sup> ±2.6×10 <sup>8</sup> R:63.5±6.8a	1.4×10 <sup>9</sup> ±2.1×10 <sup>8</sup> R:33.3±9.9b	3.4×10 <sup>8</sup> ±1.1×10 <sup>8</sup> R:83.3±5.2c	1.1×10 <sup>9</sup> ±5.0×10 <sup>8</sup> R:48.1±8.5b d	4.2×10 <sup>8</sup> ±1.2×10 <sup>8</sup> R:79.3±3.3c	1.3×10 <sup>9</sup> ±4.2×10 <sup>8</sup> R:35.8±8.9b	3.5×10 <sup>8</sup> ±1.7×10 <sup>8</sup> R:82.7±5.5c	1.5×10 <sup>9</sup> ±5.0×10 <sup>8</sup> R:28.4±8.7b	4.9×10 <sup>8</sup> ±2.1×10 <sup>8</sup> R:75.8±2.9c
<i>Staphylococcus warneri</i>	8.4×10 <sup>8</sup> ±1.9×10 <sup>8</sup> R:na	3.9×10 <sup>7</sup> ±8.4×10 <sup>6</sup> R:95.4±0.5a	3.2×10 <sup>5</sup> ±3.4×10 <sup>5</sup> R:99.9±0.2b	4.5×10 <sup>7</sup> ±1.7×10 <sup>7</sup> R:94.6±1.9a	9.3×10 <sup>4</sup> ±1.3×10 <sup>4</sup> R:99.9±0.2b	3.6×10 <sup>7</sup> ±4.2×10 <sup>6</sup> R:95.8±2.0a	9.7×10 <sup>4</sup> ±1.8×10 <sup>4</sup> R:99.9±0.3b	4.8×10 <sup>7</sup> ±2.1×10 <sup>7</sup> R:94.4±2.2a	8.7×10 <sup>4</sup> ±7.8×10 <sup>3</sup> R:99.9±0.3b	6.1×10 <sup>7</sup> ±3.5×10 <sup>7</sup> R:92.8±1.9a	8.0×10 <sup>4</sup> ±7.1×10 <sup>2</sup> R:99.9±0.3b
<i>Bacillus megaterium</i>	2.2×10 <sup>9</sup> 5.0×10 <sup>8</sup> R:na	1.0×10 <sup>7</sup> ±4.3×10 <sup>5</sup> R:99.5±1.0a	5.0×10 <sup>3</sup> ±4.2×10 <sup>3</sup> R:99.9±0.4a	1.0×10 <sup>7</sup> ±1.1×10 <sup>6</sup> R:99.5±0.8a	4.5×10 <sup>3</sup> ±5.0×10 <sup>3</sup> R:99.9±0.8a	2.7×10 <sup>7</sup> ±8.5×10 <sup>5</sup> R:98.7±0.6a	2.0×10 <sup>3</sup> ±1.4×10 <sup>3</sup> R:99.9±0.4a	6.0×10 <sup>6</sup> ±2.1×10 <sup>5</sup> R:99.7±0.3a	1.5×10 <sup>3</sup> ±7.1×10 <sup>2</sup> R:99.9±0.1a	9.1×10 <sup>6</sup> ±2.1×10 <sup>5</sup> R:99.6±0.2a	1.0×10 <sup>3</sup> ±0.0 R:99.9±0.0a
<i>Bullera alba</i>	6.2×10 <sup>7</sup> ±8.0×10 <sup>6</sup> R:na	0.0±0.0 R:100±0.0a	0.0±0.0 R:100±0.0a	0.0±0.0 R:100±0.0a	0.0±0.0 R:100±0.0a	0.0±0.0 R:100±0.0a	0.0±0.0 R:100±0.0a	0.0±0.0 R:100±0.0a	0.0±0.0 R:100±0.0a	0.0±0.0 R:100±0.0a	0.0±0.0 R:100±0.0a
<i>Rhodotorula babjevae</i>	1.3×10 <sup>8</sup> ±3.4×10 <sup>6</sup> R:na	0.0±0.0 R:100±0.0a	0.0±0.0 R:100±0.0a	0.0±0.0 R:100±0.0a	0.0±0.0 R:100±0.0a	0.0±0.0 R:100±0.0a	0.0±0.0 R:100±0.0a	0.0±0.0 R:100±0.0a	0.0±0.0 R:100±0.0a	0.0±0.0 R:100±0.0a	0.0±0.0 R:100±0.0a
<i>Cladosporium cladosporioides</i>	8.5×10 <sup>5</sup> ±1.2×10 <sup>5</sup> R:na	7.5×10 <sup>5</sup> ±1.3×10 <sup>5</sup> R:11.7±7.5a	6.5×10 <sup>4</sup> ±1.7×10 <sup>4</sup> R:92.4±3.5b	4.2×10 <sup>5</sup> ±1.8×10 <sup>5</sup> R:50.8±9.1c	3.8×10 <sup>4</sup> ±1.6×10 <sup>4</sup> R:95.6±1.7bd	2.9×10 <sup>5</sup> ±1.7×10 <sup>5</sup> R:65.9±2.6e	3.5×10 <sup>4</sup> ±1.8×10 <sup>4</sup> R:96.0±1.8d	3.1×10 <sup>5</sup> ±6.5×10 <sup>4</sup> R:64.1±9.3ef	3.2×10 <sup>4</sup> ±8.6×10 <sup>3</sup> R:96.2±1.4d	2.9×10 <sup>5</sup> ±5.7×10 <sup>4</sup> R:65.9±3.3ef	2.7×10 <sup>4</sup> ±1.1×10 <sup>4</sup> R:96.8±1.2d
<i>Epicoccum nigrum</i>	6.1×10 <sup>3</sup> ±2.2×10 <sup>3</sup> R:na	2.3×10 <sup>3</sup> ±1.3×10 <sup>3</sup> R:63.0±3.5a	1.0×10 <sup>2</sup> ±0.0 R:98.4±0.7b	1.0×10 <sup>3</sup> ±6.9×10 <sup>2</sup> R:83.1±7.5c	1.0×10 <sup>2</sup> ±0.0 R:98.4±0.8b	5.8×10 <sup>2</sup> ±3.1×10 <sup>2</sup> R:90.5±4.2c	1.0×10 <sup>2</sup> ±0.0 R:98.4±0.8b	6.0×10 <sup>2</sup> ±8.2×10 <sup>1</sup> R:90.1±5.8c	1.0×10 <sup>2</sup> ±0.0 R:98.4±0.8b	5.8×10 <sup>2</sup> ±3.1×10 <sup>2</sup> R:90.5±4.2c	1.0×10 <sup>2</sup> ±0.0 R:98.4±0.8b
Mix	9.0×10 <sup>5</sup> ±7.5×10 <sup>4</sup> R:na	1.5×10 <sup>4</sup> ±4.0×10 <sup>3</sup> R:73.3±5.8a	2.4×10 <sup>5</sup> ±1.4×10 <sup>5</sup> R:98.3±1.2b	4.6×10 <sup>3</sup> ±2.2×10 <sup>3</sup> R:73.3±6.9a	2.0×10 <sup>5</sup> ±7.8×10 <sup>4</sup> R:99.5±0.2b	4.4×10 <sup>3</sup> ±8.8×10 <sup>2</sup> R:64.4±9.9a	3.2×10 <sup>5</sup> ±1.3×10 <sup>5</sup> R:99.5±0.2b	4.0×10 <sup>3</sup> ±8.3×10 <sup>2</sup> R:72.1±6.6a	2.5×10 <sup>5</sup> ±5.6×10 <sup>4</sup> R:99.6±1.5b	4.0×10 <sup>3</sup> ±9.2×10 <sup>2</sup> R:76.9±7.5a	2.1×10 <sup>5</sup> ±8.3×10 <sup>4</sup> R:99.6±0.5b

mean ± standard deviation, samples' number N=3; R: reduction of microorganisms number; na- not applicated (control sample); R ≥ 99% (3 units on a logarithmic scale) – high antimicrobial activity; R = 90 – 98% (2 units on a logarithmic scale) – average antimicrobial activity; R = 50 – 89% (< 1 unit on a logarithmic scale) low antimicrobial activity; R < 50 – lack of antimicrobial activity, nr – no reduction; statistically different samples are marked with different letters within the same row (a,b,c,d,e,f) (Tukey's post hoc test at a significance level of 0.05)

Table S2. Microorganisms number after 15 min. ozonation process with different ozone and organic compounds concentration

Microorganisms from parsley	microorganisms number [CFU ml <sup>-1</sup> ] after 5 min. ozonation with 2 ozone doses [0.5 and 1.5 mg L <sup>-1</sup> ] R: reduction of microorganisms number [%]								
	before			after ozonation					
	organic compounds concentration [%]								
	0 %	0.1%		1.0%		10.0%		50.0%	
		0.5 mg L <sup>-1</sup>	1.5 mg L <sup>-1</sup>	0.5 mg L <sup>-1</sup>	1.5 mg L <sup>-1</sup>	0.5 mg L <sup>-1</sup>	1.5 mg L <sup>-1</sup>	0.5 mg L <sup>-1</sup>	1.5 mg L <sup>-1</sup>
<i>Pseudomonas fluorescens</i>	2.0×10 <sup>9</sup> ±9.6×10 <sup>8</sup> R:na	1.1×10 <sup>7</sup> ±3.6×10 <sup>5</sup> R:99.5±0.1a	3.2×10 <sup>6</sup> ±1.4×10 <sup>5</sup> R:99.9±0.1b	1.1×10 <sup>7</sup> ±1.5×10 <sup>6</sup> R:99.5±0.2a	8.7×10 <sup>6</sup> ±3.6×10 <sup>5</sup> R:99.9±0.1b	1.9×10 <sup>7</sup> ±5.0×10 <sup>5</sup> R:99.1±0.2a	1.1×10 <sup>7</sup> ±3.5×10 <sup>5</sup> R:99.5±0.2a	1.8×10 <sup>7</sup> ±8.5×10 <sup>5</sup> R:99.1±0.4a	7.8×10 <sup>6</sup> ±7.8×10 <sup>5</sup> R:99.9±0.1b
<i>Staphylococcus warneri</i>	8.4×10 <sup>8</sup> ±1.9×10 <sup>8</sup> R:na	1.6×10 <sup>7</sup> ±9.2×10 <sup>5</sup> R:98.1±0.1a	1.3×10 <sup>6</sup> ±7.1×10 <sup>4</sup> R:99.9±0.1b	2.7×10 <sup>7</sup> ±8.5×10 <sup>5</sup> R:96.8±0.3c	2.7×10 <sup>7</sup> ±1.1×10 <sup>6</sup> R:96.8±1.2c	3.5×10 <sup>7</sup> ±1.3×10 <sup>6</sup> R:95.8±2.5c	3.5×10 <sup>7</sup> ±5.1×10 <sup>6</sup> R:95.9±3.3c	2.3×10 <sup>7</sup> ±2.1×10 <sup>5</sup> R:97.3±2.1c	1.4×10 <sup>7</sup> ±2.5×10 <sup>6</sup> R:98.3±0.5c
<i>Bacillus megaterium</i>	2.2×10 <sup>9</sup> ±5.0×10 <sup>8</sup> R:na	3.6×10 <sup>5</sup> ±5.7×10 <sup>3</sup> R:99.9±0.1a	3.5×10 <sup>3</sup> ±7.1×10 <sup>2</sup> R:99.9±0.1a	3.9×10 <sup>5</sup> ±4.2×10 <sup>3</sup> R:99.9±0.1a	4.2×10 <sup>5</sup> ±3.3×10 <sup>4</sup> R:99.9±0.1a	4.2×10 <sup>5</sup> ±1.3×10 <sup>4</sup> R:99.9±0.1a	4.1×10 <sup>5</sup> ±1.7×10 <sup>4</sup> R:99.9±0.1a	3.2×10 <sup>5</sup> ±4.9×10 <sup>3</sup> R:99.9±0.1a	3.1×10 <sup>5</sup> ±2.7×10 <sup>4</sup> R:99.9±0.1a
<i>Cladosporium cladosporioides</i>	2.1×10 <sup>7</sup> ±4.9×10 <sup>6</sup> R:na	1.2×10 <sup>7</sup> ±1.7×10 <sup>6</sup> R:42.4±9.2a	4.3×10 <sup>6</sup> ±2.5×10 <sup>5</sup> R:79.7±4.2b	1.4×10 <sup>7</sup> ±7.9×10 <sup>5</sup> R:36.4±7.3a	7.6×10 <sup>6</sup> ±5.4×10 <sup>5</sup> R:64.4±4.8c	1.3×10 <sup>7</sup> ±4.4×10 <sup>6</sup> R: 41.2±6.1a	7.6×10 <sup>6</sup> ±4.6×10 <sup>5</sup> R:64.2±5.9c	3.1×10 <sup>7</sup> ±1.2×10 <sup>6</sup> R:nr	2.3×10 <sup>7</sup> ±2.6×10 <sup>6</sup> R:nr
<i>Bullera alba</i>	6.2×10 <sup>7</sup> ±8.1×10 <sup>6</sup> R:na	1.0×10 <sup>6</sup> ±2.2×10 <sup>5</sup> R:98.4±1.5a	0.0 ±0.0 R:100±0.0b	4.3×10 <sup>7</sup> ±6.8×10 <sup>6</sup> R:30.3±8.8c	3.3×10 <sup>7</sup> ±5.7×10 <sup>6</sup> R:47.6±7.3d	9.5×10 <sup>7</sup> ±8.7×10 <sup>6</sup> R: nr	3.3×10 <sup>7</sup> ±7.2×10 <sup>5</sup> R:47.1±6.3d	1.2×10 <sup>8</sup> ±1.6×10 <sup>7</sup> R:nr	6.4×10 <sup>7</sup> ±5.9×10 <sup>6</sup> R:nr
<i>Rhodotorula babjevae</i>	1.3×10 <sup>8</sup> ±3.4×10 <sup>6</sup> R:na	3.9×10 <sup>6</sup> ±1.7×10 <sup>5</sup> R:97.1±2.0a	4.5×10 <sup>4</sup> ±5.9×10 <sup>3</sup> R:99.9±0.1b	1.1×10 <sup>8</sup> ±5.2×10 <sup>6</sup> R:19.6±6.4c	4.5×10 <sup>7</sup> ±6.7×10 <sup>6</sup> R:66.2±2.2d	1.9×10 <sup>8</sup> ±2.0×10 <sup>7</sup> R: nr	4.0×10 <sup>7</sup> ±8.2×10 <sup>6</sup> R:70.2±5.3d	1.7×10 <sup>8</sup> ±8.1×10 <sup>6</sup> R:nr	2.2×10 <sup>8</sup> ±1.4×10 <sup>7</sup> R:nr
Mix	9.0×10 <sup>5</sup> ±7.5×10 <sup>4</sup> R:na	4.3×10 <sup>5</sup> ±1.3×10 <sup>5</sup> R:52.1±8.8a	7.8×10 <sup>4</sup> ±4.8×10 <sup>3</sup> R:91.3±0.5b	4.9×10 <sup>5</sup> ±1.5×10 <sup>5</sup> R:44.9±9.6a	3.3×10 <sup>5</sup> ±1.8×10 <sup>5</sup> R:63.3±7.3c	6.2×10 <sup>5</sup> ±4.2×10 <sup>5</sup> R:31.2±8.1a	5.1×10 <sup>5</sup> ±3.3×10 <sup>5</sup> R:43.7±4.9a	1.5×10 <sup>6</sup> ±9.9×10 <sup>4</sup> R:nr	8.0×10 <sup>5</sup> ±2.7×10 <sup>5</sup> R:10.9±9.9d

mean ± standard deviation, samples' number N=3; R: reduction of microorganisms number; na- not applicated (control sample); R ≥ 99% (3 units on a logarithmic scale) – high antimicrobial activity; R = 90 – 98% (2 units on a logarithmic scale) – average antimicrobial activity; R = 50 – 89% (< 1 unit on a logarithmic scale) low antimicrobial activity; R < 50 – lack of antimicrobial activity, nr – no reduction, statistically different samples are marked with different letters within the same row (a,b,c,d) (Tukey's post hoc test at a significance level of 0.05)

Table S3. Microorganisms (fungi and bacteria) number in parsley rising ozonated water (ozone concentration 1.5 mg L<sup>-1</sup>) in closed circuit during process time

Water rising / parsley mass [g L <sup>-1</sup> ]	microorganisms number in parsley samples [CFU ml <sup>-1</sup> ]; R: reduction of microorganisms number [%] during process time [min]									
	F	B	F	B	F	B	F	B	F	B
	before				after ozonation					
	0 min		3 min		5 min		10 min		15 min	
Tap water (control)/ 25 g	2.7×10 <sup>4</sup> ±7.6×10 <sup>3</sup> R:na	1.4×10 <sup>4</sup> ±2.8×10 <sup>3</sup> R:na	2.7×10 <sup>4</sup> ±1.0×10 <sup>4</sup> R:nr	1.9×10 <sup>4</sup> ±5.0×10 <sup>3</sup> R:nr	2.9×10 <sup>4</sup> ±7.2×10 <sup>3</sup> R:nr	1.5×10 <sup>4</sup> ±7.1×10 <sup>2</sup> R:nr	2.1×10 <sup>4</sup> ±2.2×10 <sup>4</sup> R:23.3±8.9a	1.1×10 <sup>4</sup> ±1.2×10 <sup>4</sup> R:23.9±6.3a	1.7×10 <sup>4</sup> ±9.5×10 <sup>3</sup> R:37.6±3.9b	9.6×10 <sup>3</sup> ±1.2×10 <sup>4</sup> R:31.4±7.7b
Ozonated water/ 25 g	5.6×10 <sup>4</sup> ±2.8×10 <sup>3</sup> R:na	1.4×10 <sup>4</sup> ±2.8×10 <sup>3</sup> R:na	2.0×10 <sup>2</sup> ±4.0×10 <sup>2</sup> R:99.3±0.1a	1.0×10 <sup>3</sup> ±0.0 R:98.2±1.2a	0.0 ±0.0 R:100±0.0b	1.0×10 <sup>3</sup> ±0.0 R:98.2±0.5a	0.0 ±0.0 R:100±0.0b	0.0 ±0.0 R:100±0.0b	0.0 ±0.0 R:100±0.0b	0.0 ±0.0 R:100±0.0b
Ozonated water / 50 g	7.5×10 <sup>5</sup> ±2.4×10 <sup>5</sup> R:na	4.5×10 <sup>9</sup> ±3.7×10 <sup>9</sup> R:na	8.7×10 <sup>3</sup> ±4.3×10 <sup>3</sup> R:98.8±0.5a	6.7×10 <sup>4</sup> ±3.1×10 <sup>4</sup> R:99.9±0.1b	2.2×10 <sup>4</sup> ±5.5×10 <sup>3</sup> R:97.0±0.5c	2.9×10 <sup>4</sup> ±6.4×10 <sup>3</sup> R:99.9±0.1b	7.0×10 <sup>3</sup> ±1.2×10 <sup>3</sup> R:99.1±0.2a	1.0×10 <sup>5</sup> ±1.2×10 <sup>4</sup> R:99.9±0.1b	2.9×10 <sup>3</sup> ±1.3×10 <sup>3</sup> R:99.6±0.1d	1.1×10 <sup>5</sup> ±1.8×10 <sup>4</sup> R:99.9±0.1b
Ozonated water / 75 g	1.6×10 <sup>6</sup> ±9.1×10 <sup>5</sup> R:na	1.3×10 <sup>7</sup> ±2.1×10 <sup>5</sup> R:na	2.2×10 <sup>5</sup> ±1.4×10 <sup>5</sup> R:86.5±3.3a	1.4×10 <sup>6</sup> ±2.1×10 <sup>5</sup> R:89.9±2.7a	1.5×10 <sup>4</sup> ±3.2×10 <sup>3</sup> R:99.1±0.2b	4.4×10 <sup>4</sup> ±7.8×10 <sup>3</sup> R:99.7±0.3c	7.1×10 <sup>3</sup> ±2.1×10 <sup>3</sup> R:99.6±0.2c	2.9×10 <sup>4</sup> ±3.5×10 <sup>3</sup> R:99.8±0.1c	1.1×10 <sup>3</sup> ±3.4×10 <sup>3</sup> R:99.3±0.3c	3.0×10 <sup>4</sup> ±1.4×10 <sup>4</sup> R:99.8±0.1c
Ozonated water / 100 g	1.4×10 <sup>6</sup> ±1.7×10 <sup>5</sup> R:na	1.6×10 <sup>7</sup> ±7.1×10 <sup>4</sup> R:na	2.4×10 <sup>4</sup> ±3.4×10 <sup>3</sup> R:98.3±0.1a	1.4×10 <sup>5</sup> ±1.3×10 <sup>4</sup> R:99.2±0.2b	2.2×10 <sup>4</sup> ±1.0×10 <sup>4</sup> R:98.5±0.4a	2.1×10 <sup>5</sup> ±1.8×10 <sup>4</sup> R:98.7±0.3a	1.3×10 <sup>4</sup> ±3.6×10 <sup>3</sup> R:99.1±0.1b	4.6×10 <sup>4</sup> ±5.7×10 <sup>3</sup> R:99.7±0.1c	8.5×10 <sup>3</sup> ±6.1×10 <sup>3</sup> R:99.4±0.2b	8.2×10 <sup>4</sup> ±1.4×10 <sup>3</sup> R:99.5±0.1b

mean ± standard deviation, samples' number N=3; Fungi (F); Bacteria (B) ; R: reduction of microorganisms number; na- not applicated (control sample); R ≥ 99% (3 units on a logarithmic scale) – high antimicrobial activity; R = 90 – 98% (2 units on a logarithmic scale) – average antimicrobial activity; R = 50 – 89% (< 1 unit on a logarithmic scale) low antimicrobial activity; R < 50 – lack of antimicrobial activity, nr – no reduction, statistically different samples are marked with different letters within the same row (a,b,c,d) (Tukey's post hoc test at a significance level of 0.05)