

Table S1. Calibration lines of odorants

target compound	internal standard	quantifier ions (<i>m/z</i>)		
		analyte	standard	calibration line ^a
<i>Bananas</i>				
ethyl butanoate	ethyl 2-(² H ₃)methylbutanoate	88	105	y=9.6364x-0.0918
ethyl 3-methylbutanoate	ethyl 3-(² H ₃)methyl(2,2,3,4,4,4- ² H ₆)butanoate	85	94	y=1.691x-0.0155
pentan-2-yl acetate	ethyl 2-(² H ₃)methylbutanoate	87	105	y=1.9985x-0.1996
3-methylbutyl acetate	3-methylbutyl (¹³ C ₂)acetate	61	63	y=1.1954x+0.1645
2-methylpropyl butanoate	3-methylbutyl (¹³ C ₂)acetate	71	63	y=0.0725x-0.008
3-methylbutan-1-ol	3-(² H ₃)methyl(2,2,3,4,4,4- ² H ₆)butan-1-ol	70	77+78	y=1.0685x+0.2159
3-methylbutyl butanoate	ethyl 2-(² H ₃)methylbutanoate	89	105	y=0.603x-0.2476
3-methylbutyl 3-methylbutanoate	ethyl 2-(² H ₃)methylbutanoate	103	105	y=0.2668x-0.0967
3-methylbutyl 3-methylbutanoate	ethyl 3-(² H ₃)methyl(2,2,3,4,4,4- ² H ₆)butanoate	103	94	y=0.2384x-0.1697
<i>Oranges</i>				
α-pinene	7-(² H ₃)methyl-3-methylidene(8,8,8- ² H ₃)octa-1,6-diene	136	141	y=1.8844x-0.1078
hexanal	(5,5,6,6- ² H ₄)hexanal	72	76	y=0.9538x-0.1245
β-myrcene	7-(² H ₃)methyl-3-methylidene(8,8,8- ² H ₃)octa-1,6-diene	136	141	y=1.6801x+0.0793
limonene	3-methylbutyl acetate	136	87	y=0.1182x-0.0132
α-terpineol	3-(² H ₃)methyl-7-methyl-(4,4- ² H ₂)octa-1,6-dien-3-ol	136	141	y=0.723x-0.3431
carvone	3-(² H ₃)methyl-7-methyl-(4,4- ² H ₂)octa-1,6-dien-3-ol	150	141	y=3.7076x-1.377

^ay = peak area standard / peak area analyte; x = amount standard (μg) / amount analyte (μg)

Table S2. Growth and sporulation of *A. niger*, *P. digitatum*, and *P. expansum* on artificially contaminated bananas (upper panel) and oranges (lower panel) with and without ozone treatment (O₃) over a course of 11 days in time.

Banana	<i>A. niger</i>		<i>P. digitatum</i>		<i>P. expansum</i>	
	O ₃	control	O ₃	control	O ₃	control
Day 1	0.0	0.0	0.0	0.0	0.0	0.0
Day 2	0.0	0.0	0.0	0.0	0.0	0.0
Day 3	0.0	0.0	0.0	0.0	0.0	0.0
Day 4	0.0	0.0	0.0	0.0	0.0	0.17
Day 7	0.0	0.0	0.0	0.0	0.17	0.83
Day 8	0.0	0.17	0.0	0.0	1.00	0.83
Day 9	0.0	0.33	0.0	0.17	1.00	1.50
Day 10	0.0	0.67	0.17	0.17	1.00	1.50
Day 11	0.67	0.83	0.83	1.00	1.00	1.50

Orange	<i>A. niger</i>		<i>P. digitatum</i>		<i>P. expansum</i>	
	O ₃	control	O ₃	control	O ₃	control
Day 1	0.0	0.0	0.0	0.0	0.0	0.0
Day 2	0.0	0.0	0.0	0.0	0.0	0.0
Day 3	0.0	0.0	0.0	0.0	0.0	0.0
Day 4	0.0	0.0	0.0	0.0	0.0	0.0
Day 7	0.0	0.0	0.0	0.0	0.0	0.0
Day 8	0.0	0.0	0.0	0.0	0.0	0.0
Day 9	0.0	0.0	0.0	0.0	0.0	0.0
Day 10	0.0	0.0	0.0	0.0	0.0	0.0
Day 11	0.50	0.50	0.50	0.50	0.50	1.00

Legend to Table S2: Each day the growth and sporulation of each mould was visually inspected, ranked, and scored. A score of 0 indicates no growth (white boxes), a score ≤ 0.5 indicates growth without sporulation (light green boxes), and ≤ 1.5 growth with sporulation (green boxes). A score of 1.5 (complete sporulation of the colony) is indicated in dark green. In the boxes average score values are provided. The experiment was independently repeated three times using three fruits each.

Table S3. Concentrations of selected odorants in bananas during storage without (control) and with ozone treatment once or three times a day

Ozone treatment	Sample	2-pentyl acetate	3-methylbutyl acetate	2-methylpropyl butanoate	3-methyl-1-butanol	3-methylbutyl butanoate	3-methylbutyl 3-methylbutanoate	ethyl butanoate	ethyl 3-methylbutanoate
Once a day	Day0	163 ± 43 d	774 ± 492 e	nd	1016 ± 676 e	nd	nd	25 ± 6 e	nd
Once a day	Ozon Day2	2330 ± 208 a	15300 ± 6772 c	441 ± 184 b	6655 ± 3833 d	271 ± 129 a	6.06 ± 1.43 b	270 ± 26 d	nd
Once a day	RT Day2	2307 ± 183 a	19900 ± 1443 cd	627 ± 278 a	9763 ± 3580 d	316 ± 210 a	15.4 ± 1.0 b	292 ± 54 c	nd
Once a day	Ozon Day4	2534 ± 326 a	26367 ± 8135 ab	627 ± 372 a	13067 ± 2555 c	59 ± 23 a	2.88 ± 1.18 b	1383 ± 345 b	65 ± 15 a
Once a day	RT Day4	2248 ± 158 a	27900 ± 1830 a	762 ± 289 a	12876 ± 2483 c	147 ± 78 a	5.26 ± 2.56 b	1295 ± 505 b	56 ± 23 a
Once a day	Ozon Day7	1550 ± 435 b	17467 ± 3385 b	1477 ± 1050 a	27075 ± 8451 cd	360 ± 278 a	13.5 ± 0.8 b	2120 ± 962 bc	135 ± 8 a
Once a day	RT Day7	1704 ± 121 b	26034 ± 2969 bc	871 ± 176 a	20080 ± 5582 de	257 ± 166 a	16.4 ± 5.2 b	2538 ± 448 a	97 ± 17 a
Once a day	Ozon Day9	873 ± 35 c	17750 ± 1655 b	724 ± 56 a	80525 ± 13768 b	329 ± 87 a	30.0 ± 15.3 b	3274 ± 299 ab	106 ± 8 a
Once a day	RT Day9	719 ± 100 c	14634 ± 1223 d	734 ± 327 a	43550 ± 11290 c	554 ± 182 a	34.1 ± 17.6 b	2914 ± 994 de	90 ± 42 a
Once a day	Ozon Day11	661 ± 58 c	18234 ± 1557 a	1072 ± 306 a	87950 ± 41936 b	497 ± 58 a	470 ± 52 a	3214 ± 1036 cd	146 ± 60 a
Once a day	RT Day11	547 ± 76 cd	14650 ± 3182 c	1193 ± 744 ab	159000 ± 25239 a	464 ± 101 a	401 ± 124 a	4274 ± 2033 a	145 ± 67 a
Three times a day	Day0	420 ± 38 f	326 ± 13 bc	nd	nd	nd	nd	1703 ± 194 e	nd
Three times a day	Ozon Day2	1832 ± 1148 bcde	3252 ± 3264 bc	144 ± 102 ab	nd	nd	nd	1984 ± 304 de	nd
Three times a day	RT Day2	1278 ± 271 def	2002 ± 1352 bc	118 ± 63 b	nd	nd	nd	2106 ± 208 de	nd
Three times a day	Ozon Day4	4124 ± 336 a	8473 ± 5748 bc	770 ± 514 ab	4728 ± 1043 bc	nd	nd	7966 ± 3039 abc	nd
Three times a day	RT Day4	3240 ± 120 ab	4541 ± 2482 bc	225 ± 27 ab	893 ± 477 c	nd	nd	10631 ± 3099 ab	nd
Three times a day	Ozon Day7	2284 ± 868 bcd	36744 ± 12492 bc	996 ± 658 ab	2124 ± 581 bc	nd	nd	8060 ± 1484 b	nd
Three times a day	RT Day7	2555 ± 1301 abcd	46229 ± 17680 ab	901 ± 264 ab	1892 ± 722 c	nd	nd	9777 ± 2066 ab	nd
Three times a day	Ozon Day9	2603 ± 673 bc	68191 ± 47532 a	1430 ± 937 a	10860 ± 8354 ab	nd	nd	10338 ± 1815 ab	nd
Three times a day	RT Day9	2897 ± 660 ab	73511 ± 28263 a	1189 ± 623 ab	4667 ± 1675 bc	nd	nd	11230 ± 3212 a	nd
Three times a day	Ozon Day11	1427 ± 306 cdef	42526 ± 9741 ab	1339 ± 583 ab	16702 ± 3199 a	nd	nd	4744 ± 686 cd	nd
Three times a day	RT Day11	943 ± 137 ef	20504 ± 7458 bc	1245 ± 713 ab	11232 ± 4648 ab	nd	nd	3827 ± 471 de	nd

Table S4. Concentrations of selected odorants in oranges during storage without (control) and with ozone treatment once or three times a day

Ozone treatment	Sample	hexanal	beta-myrcene	alpha-pinene	limonene	alpha-terpineol	carvone
Once a day	Day0	1030 ± 111 b	261 ± 40 a	152 ± 50 ab	4420 ± 683 a	190 ± 52 a	199 ± 94 a
Once a day	Ozon Day2	720 ± 136 c	101 ± 74 bcd	102 ± 33 b	3180 ± 2931 a	97.4 ± 56 bc	168 ± 29 ab
Once a day	RT Day2	691 ± 54 c	152 ± 41 abcd	176 ± 29 ab	5990 ± 1531 a	114 ± 21 abc	172 ± 16 ab
Once a day	Ozon Day4	754 ± 27 c	241 ± 55 ab	234 ± 53 ab	5760 ± 1049 a	60.4 ± 7 bc	162 ± 5 ab
Once a day	RT Day4	736 ± 10 c	218 ± 3 abc	212 ± 20 ab	5930 ± 330 a	86.5 ± 18 bc	162 ± 15 ab
Once a day	Ozon Day7	697 ± 24 c	74.9 ± 8 d	96.7 ± 34 b	2420 ± 299 a	40.8 ± 12 c	101 ± 17 b
Once a day	RT Day7	723 ± 11 c	160 ± 76 abcd	130 ± 72 ab	4150 ± 2686 a	52.6 ± 13 bc	137 ± 26 ab
Once a day	Ozon Day9	881 ± 35 bc	116 ± 7 bcd	130 ± 52 b	4780 ± 1891 a	68.9 ± 6 bc	194 ± 9 ab
Once a day	RT Day9	865 ± 17 bc	76.4 ± 23 cd	109 ± 42 b	2310 ± 341 a	46.3 ± 4 bc	144 ± 10 ab
Once a day	Ozon Day11	1380 ± 184 a	154 ± 102 abcd	283 ± 128 a	3370 ± 1399 a	98.5 ± 27 bc	222 ± 59 a
Once a day	RT Day11	1120 ± 85 b	204 ± 32 abcd	226 ± 67 ab	3980 ± 612 a	126 ± 5 ab	228 ± 31 a
Three times a day	Day0	622 ± 92 a	738 ± 241 a	428 ± 128 a	4100 ± 565 ab	110 ± 20 d	256 ± 38 bc
Three times a day	Ozon Day2	696 ± 77 a	163 ± 32 bc	155 ± 43 bc	3910 ± 1207 ab	156 ± 18 c	408 ± 19 a
Three times a day	RT Day2	655 ± 20 a	380 ± 178 b	210 ± 34 b	5610 ± 1543 a	261 ± 38 a	427 ± 15 a
Three times a day	Ozon Day4	630 ± 84 a	92.3 ± 21 c	83.1 ± 23 c	2287 ± 650 b	153 ± 21 c	412 ± 16 a
Three times a day	RT Day4	672 ± 92 a	131 ± 44 bc	108 ± 27 bc	4190 ± 948 ab	213 ± 20 b	425 ± 10 a
Three times a day	Ozon Day7	617 ± 50 a	285 ± 202 bc	116 ± 22 bc	3300 ± 560 ab	67.3 ± 20 e	161 ± 28 d
Three times a day	RT Day7	685 ± 62 a	245 ± 201 bc	188 ± 107 bc	3120 ± 2013 ab	84.4 ± 41 de	239 ± 42 c
Three times a day	Ozon Day9	629 ± 103 a	98.9 ± 47 c	94.4 ± 12 bc	2980 ± 2150 ab	62.0 ± 18 e	227 ± 16 c
Three times a day	RT Day9	596 ± 120 a	157 ± 47 bc	138 ± 29 bc	5520 ± 1617 a	70.9 ± 11 de	300 ± 42 b
Three times a day	Ozon Day11	677 ± 126 a	216 ± 101 bc	181 ± 46 bc	3420 ± 1182 ab	49.7 ± 14 e	237 ± 42 c
Three times a day	RT Day11	647 ± 84 a	172 ± 57 bc	136 ± 27 bc	3450 ± 802 ab	66.1 ± 10 e	241 ± 10 c

Table S5. Total acid concentrations in the bananas and oranges during storage without (control) or with ozone treatment once and three times a day

Sample	Total acid concentrations (g/L)			
	Bananas		Oranges	
	1 ozonisation per day	3 ozonisations per day	1 ozonisation per day	3 ozonisations per day
Day0	5.07 ± 0.55 a	3.99 ± 0.20 a	19.44 ± 1.38 ab	6.89 ± 0.94 a
Ozon Day2	4.48 ± 0.11 ab	4.74 ± 0.68 a	19.98 ± 1.37 a	5.75 ± 0.43 ab
RT Day2	5.03 ± 0.19 a	4.54 ± 0.27 a	18.79 ± 0.09 ab	6.18 ± 0.41 ab
Ozon Day4	4.12 ± 0.33 bc	4.64 ± 0.74 a	20.40 ± 2.51 a	5.50 ± 1.05 b
RT Day4	3.69 ± 0.24 bcd	4.96 ± 0.71 a	21.61 ± 0.11 a	6.02 ± 0.64 ab
Ozon Day7	3.33 ± 0.11 de	4.36 ± 0.81 a	18.44 ± 3.22 ab	5.86 ± 0.54 ab
RT Day7	3.50 ± 0.24 cde	4.23 ± 0.56 a	19.61 ± 0.25 ab	5.66 ± 0.55 ab
Ozon Day9	3.86 ± 0.12 bcd	3.61 ± 0.42 a	14.90 ± 1.82 b	5.88 ± 0.11 ab
RT Day9	4.39 ± 0.65 abc	4.61 ± 0.93 a	16.22 ± 0.45 ab	6.36 ± 0.38 ab
Ozon Day11	2.81 ± 0.13 e	3.61 ± 0.71 a	19.37 ± 2.23 ab	5.36 ± 0.31 b
RT Day11	3.28 ± 0.13 de	3.37 ± 0.47 a	17.59 ± 2.05 ab	5.54 ± 0.46 ab

Table S6. Ascorbic acid concentrations in the bananas and oranges without (control) or with ozone treatment three times a day

Sample	Ascorbic acid (mg / 100g)	
	Bananas	Oranges
Day0	10.89 ± 0.92 a	50.75 ± 5.52 ab
Ozon Day2	9.69 ± 1.28 a	49.74 ± 5.64 abc
RT Day2	9.61 ± 2.16 a	49.2 ± 3.96 abc
Ozon Day4	5.41 ± 1.19 bc	53.19 ± 2.71 a
RT Day4	6.42 ± 0.56 bc	50.17 ± 0.99 ab
Ozon Day7	4.16 ± 0.46 c	44.39 ± 5.37 bc
RT Day7	4.49 ± 0.26 c	47.22 ± 2.87 abc
Ozon Day9	4.27 ± 0.14 c	49.23 ± 2 abc
RT Day9	4.86 ± 0.61 bc	46.32 ± 3.76 abc
Ozon Day11	4.70 ± 0.31 c	46.02 ± 4.09 abc
RT Day11	4.79 ± 0.44 c	43.46 ± 3.13 c