

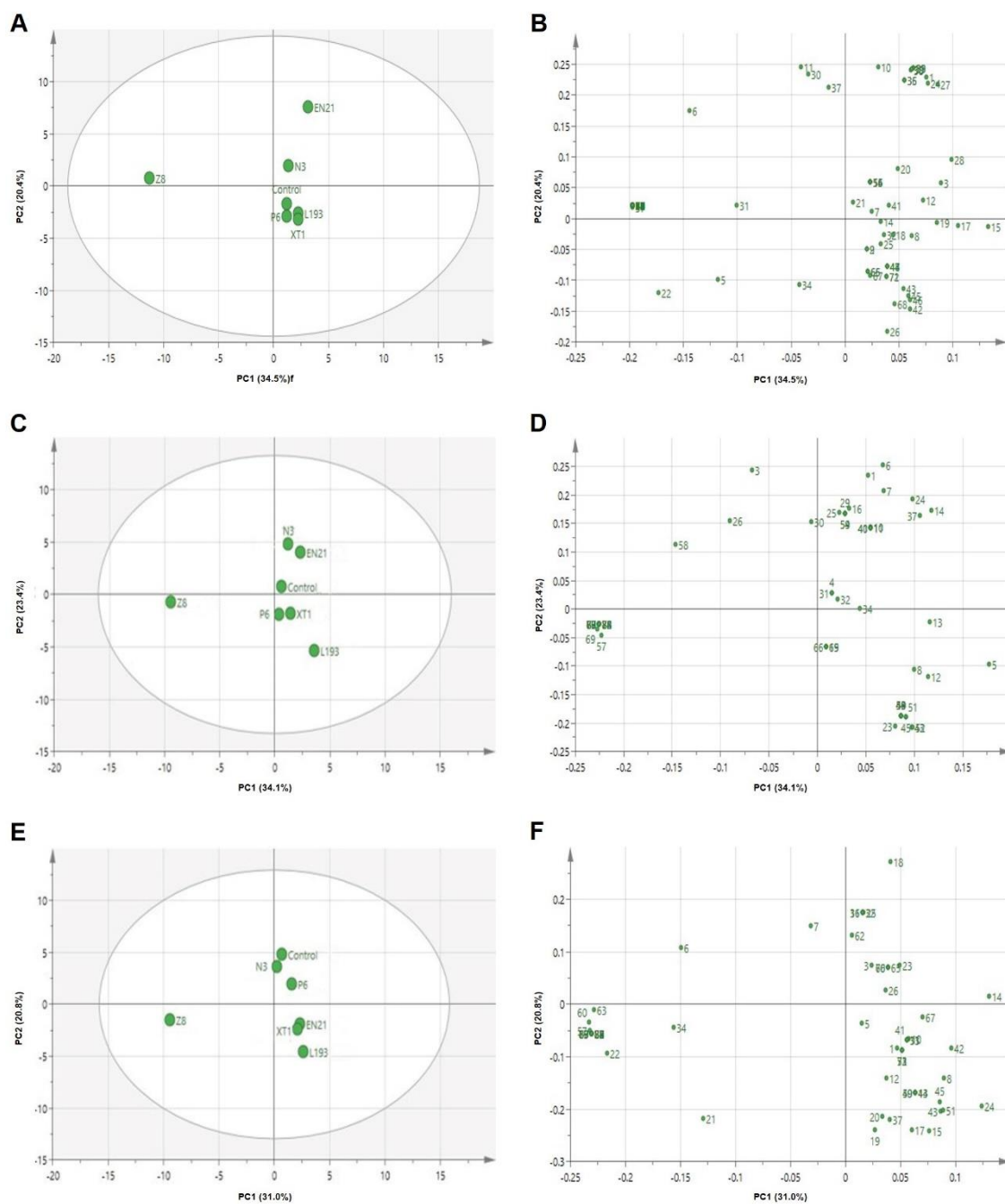
## *Supplementary Material*

**Table S1.** Full spectrum of volatile compounds identified by GC/MS after HS-SPME. Reference (Ref) for each compound were assigned arbitrary for further analysis. Quantification of volatile compounds were carried out by comparison of peak areas to that of internal standard (5-nonanol) and the mean of two replicates is shown in this table with SD in parenthesis. Retention time (RT) of each compound is shown and its precision is based on the experimental procedure. Identification scale of each compound (Id) is based on: 1, identified (mass spectrum and RT were in accordance with standards); 2, tentatively identified (mass spectrum matched in the standard NIST 2017 library and RT matched with literature); 3, tentatively identified (mass spectrum agreed with the standard NIST 2017). -, not detected.

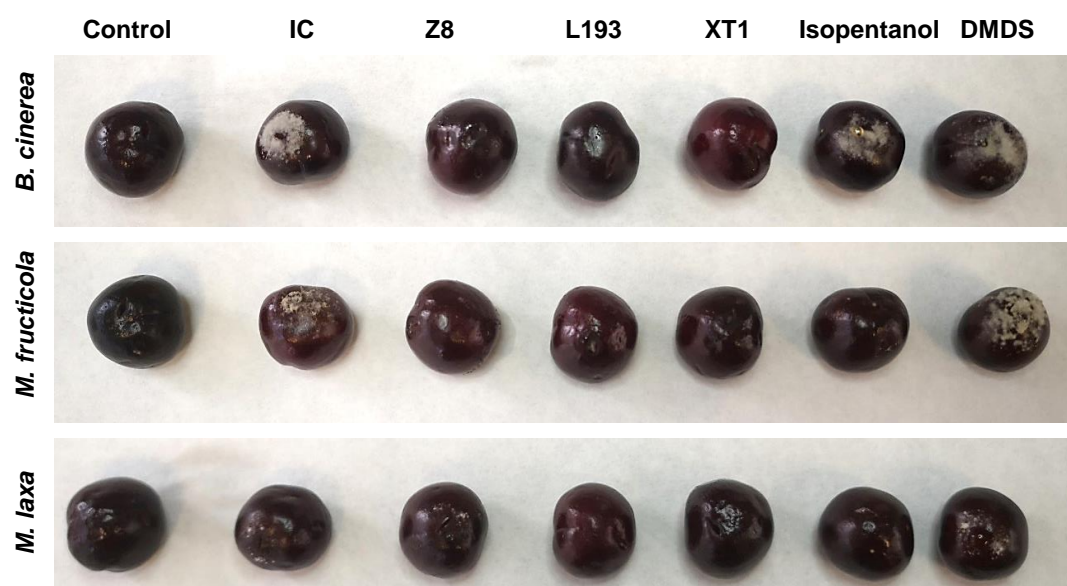
Ref	Volatile compound	CAS number	RT (min)	Id	Concentration of volatile compounds ( $\mu\text{g L}^{-1}$ )																				
					Uninoculated media			<i>S. equorum</i> EN21			<i>B. atrophaeus</i> L193			<i>Peribacillus</i> sp. N3			<i>P. segetis</i> P6			<i>B. velezensis</i> XT1			<i>P. vulpis</i> Z8		
					MOLP	SG	TSa	MOLP	SG	TSa	MOLP	SG	TSa	MOLP	SG	TSa	MOLP	SG	TSa	MOLP	SG	TSa	MOLP	SG	TSa
1	Acetone	67-64-1	2.184	1	4.69 (0.7)	4.13 (0.0)	3.19 (0.3)	28.91 (8.6)	9.33 (0.3)	22.19 (8.9)	7.81 (1.7)	4.33 (1.5)	3.33 (0.5)	10.2 (0.2)	9.00 (0.2)	1.78 (0.5)	3.1 (1.2)	3.32 (0.2)	1.56 (0.1)	6.19 (0.4)	3.9 (0.2)	3.24 (0.3)	3.73 (0.4)	4.46 (0.1)	3.57 (0.1)
2	Butanal	123-72-8	2.649	2	2.83 (0.5)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	Ethyl Acetate	141-78-6	2.738	1	22.99 (2.8)	30.07 (0.7)	24.93 (1.8)	26.6 (5.3)	29.5 (2.3)	31.68 (13.1)	12.5 (1.0)	2.82 (0.7)	14.16 (0.3)	19.54 (0.5)	26.79 (1.1)	17.49 (1.1)	27.45 (5.4)	17.37 (1.3)	18.76 (0.8)	23.02 (2.3)	16.3 (1.1)	14.29 (0.9)	15.33 (0.8)	24.33 (0.6)	18.3 (1.0)
4	Methyl Acetate	79-20-9	2.277	1	-	0.62 (0.0)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	2-Butanone	78-93-3	2.877	2	4.67 (0.6)	1.46 (0.1)	2.71 (0.5)	4.19 (0.7)	1.26 (0.3)	3.6 (1.4)	5.43 (0.2)	3.04 (0.9)	4.12 (0.0)	5.1 (0.3)	2.02 (0.2)	3.38 (0.7)	8.72 (1.8)	2.63 (0.1)	4.43 (0.2)	5.12 (0.4)	1.26 (0.0)	2.15 (0.2)	8.02 (0.1)	3.36 (0.2)	
6	2-Methylbutanal	96-17-3	3.024	1	-	0.58 (0.4)	4.22 (0.3)	2.17 (0.3)	2.24 (0.3)	-	-	-	-	1.34 (0.5)	2.55 (0.1)	-	-	-	-	-	-	-	3.44 (1.4)	-	3.56 (0.1)
7	3-Methylbutanal	590-86-3	3.078	2	28.69 (8.0)	2.45 (0.0)	20.81 (2.0)	6.84 (0.8)	10.74 (0.8)	4.96 (2.4)	-	-	-	5.04 (1.1)	3.44 (0.3)	-	-	-	-	1.81 (0.2)	-	-	2.48 (0.6)	-	5.39 (0.2)
8	2,3-Butanedione	431-03-8	4.141	1	1.51 (0.2)	0.51 (0.0)	1.39 (0.1)	-	-	-	10.59 (1.8)	6.01 (1.5)	3.49 (1.4)	20.05 (4.7)	3.92 (0.2)	-	-	-	-	9.26 (0.1)	8.47 (0.1)	5.65 (0.2)	-	-	-
9	2-Methyl-2-butenal	1115-11-3	7.461	1	1.02 (0.0)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	Isopentanol	123-51-3	12.490	1	-	-	-	34.32 (2.1)	73.41 (3.5)	110.63 (27.7)	1.79 (0.1)	-	-	7.68 (0.2)	1.06 (0.3)	0.77 (0.3)	2.41 (0.5)	-	3.07 (0.1)	-	-	-	6.11 (1.1)	-	-
11	Isopentyl acetate	123-92-2	8.497	1	-	-	-	4.07 (1.2)	1.60 (0.2)	3.05 (0.6)	-	-	-	0.97 (0.0)	-	-	-	-	-	-	-	-	2.11 (0.2)	-	-
12	1-Butanol	71-36-3	9.911	1	4.26 (0.2)	1.15 (0.0)	8.01 (0.3)	27.24 (2.4)	1.97 (0.2)	16.05 (4.2)	46.91 (8.0)	4.5 (0.9)	16.92 (0.1)	6.12 (0.1)	-	1.00 (0.0)	-	-	-	15.09 (0.8)	-	-	4.83 (0.6)	-	6.03 (0.3)
13	Ethanol	64-17-5	3.296	1	-	0.67 (0.0)	-	-	0.95 (0.0)	-	-	0.98 (0.2)	0.87 (0.0)	-	-	-	-	-	-	-	-	-	1.27 (0.2)	-	-
14	D-Limonene	5989-27-5	11.412	1	1.44 (0.2)	0.69 (1.9)	2.34 (0.3)	-	5.23 (0.6)	6.81 (1.9)	-	1.88 (1.3)	2.23 (1.5)	1.06 (0.1)	3.25 (2.0)	1.65 (1.9)	-	-	8.67 (1.1)	-	1.31 (0.1)	3.07 (0.7)	-	-	-
15	Pyrazine	290-37-9	12.308	2	1.61 (0.1)	-	4.59 (0.3)	2.87 (0.1)	-	5.63 (1.0)	2.78 (0.2)	-	5.9 (0.0)	1.69 (0.1)	-	3.96 (0.4)	2.88 (0.4)	-	5.12 (0.1)	2.73 (0.2)	-	5.36 (0.1)	1.32 (0.2)	-	4.87 (0.2)
16	Styrene	100-42-5	14.215	1	-	0.58 (0.1)	0.6 (0.0)	-	-	-	-	-	-	0.74 (0.3)	1.98 (0.7)	-	-	-	-	-	-	-	-	-	-
17	Pyrazine, methyl-	109-08-0	14.670	2	1.78 (0.1)	-	4.05 (0.2)	3.04 (0.1)	-	5.05 (0.7)	3.11 (0.1)	-	5.15 (0.2)	1.7 (0.1)	-	3.48 (0.1)	2.83 (0.2)	-	4.57 (0.0)	2.92 (0.2)	-	4.7 (0.0)	1.8 (0.2)	-	4.41 (0.3)
18	2-Propanone, 1-hydroxy-	116-09-6	16.206	2	0.88 (0.1)	-	1.24 (0.3)	-	-	-	-	-	-	1.5 (0.0)	-	1.21 (0.3)	1.03 (0.0)	-	1.06 (0.1)	-	-	-	-	-	-
19	Pyrazine, 2,5-dimethyl-	123-32-0	17.162	2	13.69 (0.8)	-	49.48 (3.4)	32.01 (0.3)	-	61.01 (5.2)	30.77 (1.4)	-	66.3 (0.1)	9.92 (0.2)	-	36.62 (0.6)	32.92 (5.1)	0.58 (0.0)	54.84 (0.1)	25.57 (0.3)	-	57.26 (0.1)	15.05 (0.2)	-	56.31 (0.8)
20	Pyrazine, 2-ethyl-5-methyl-	13360-64-0	20.167	2	1.26 (0.2)	-	1.75 (0.1)	2.23 (0.1)	-	2.17 (0.0)	1.95 (0.0)	-	2.38 (0.1)	0.96 (0.0)	-	1.16 (0.0)	-	-	2.18 (0.0)	2.13 (0.1)	-	2.13 (0.1)	1.15 (0.1)	-	2.01 (0.2)
21	Pyrazine, trimethyl-	14667-55-1	20.748	2	1.48 (0.1)	-	1.77 (0.2)	2.72 (0.1)	-	2.29 (0.0)	2.45 (0.2)	-	2.46 (0.1)	1.24 (0.1)	-	1.49 (0.1)	2.37 (0.3)	-	2.11 (0.0)	2.45 (0.0)	-	2.22 (0.0)	2.22 (0.2)	-	2.92 (0.3)
22	Pyrazine, 3-ethyl-2,5-dimethyl-	13360-65-1	22.467	2	1.05 (0.0)	-	1.38 (0.1)	-	-	1.72 (0.1)	1.47 (0.1)	-	1.56 (0.0)	0.84 (0.0)	-	1.04 (0.0)	1.42 (0.1)	-	1.58 (0.0)	1.54 (0.1)	-	1.53 (0.0)	3.23 (0.2)	-	4.03 (0.2)
23	2-Ethyl-1-hexanol	104-76-7	24.707	1	-	-	-	-	-	-	-	0.95 (0.3)	0.85 (0.0)	-	-	1.2 (0.0)	-	0.73 (0.1)	6.93 (0.2)	-	-	-	-	-	-
24	Acetic acid	64-19-7	22.523	1	3.75 (3.0)	-	-	180.23 (17.1)	25.58 (1.9)	4.13 (2.0)	36.85 (7.1)	10.02 (6.5)	3.56 (1.1)	32.85 (4.5)	30.8 (0.4)	1.26 (0.2)	-	-	-	21.9 (0.4)	6.07 (4.1)	2.12 (0.0)	-	-	-
25	Benzaldehyde	100-52-7	25.552	1	39.82 (5.7)	16.64 (0.6)	52.89 (3.3)	4.61 (0.4)	5.1 (0.1)	-	1.11 (0.1)	0.45 (0.2)	0.58 (0.0)	5.31 (0.4)	11.55 (1.0)	0.37 (0.1)	2.03 (1.2)	-	-	7.04 (1.2)	3.0 (0.9)	-	1.72 (0.2)	2.71 (0.4)	-
26	Ethanol, 2-(2-ethoxyethoxy)-	111-90-0	29.655	2	3.02 (0.5)	2.83 (0.2)	2.91 (0.1)	2.43 (0.3)	1.55 (0.2)	2.31 (0.8)	3.28 (1.2)	1.5 (0.1)	2.33 (0.0)	2.37 (0.1)	3.58 (1.5)	1.8 (0.1)	2.63 (0.3)	1.38 (0.2)	1.43 (0.1)	3.55 (0.4)	1.68 (0.0)	1.88 (0.2)	2.66 (0.5)	2.8 (0.6)	1.9 (0.3)
27	Butanoic acid	107-92-6	30.077	1	1.09 (0.8)	-	-	18.50 (1.3)	-	-	4.03 (1.4)	-	-	4.92 (0.4)	-	-	-	-	-	3.95 (0.5)	-	-	-	-	-
28	Acetophenone	98-86-2	30.536	2	1.33 (0.0)	-	-	1.57 (0.1)	-	-	-	-	-	1.04 (0.0)	-	-	-	-	-	1.62 (0.1)	-	-	-	-	-
29	Propanoic acid	79-09-4	26.597	2	-	-	-	3.54 (0.3)	-	-	-	-	-	1.22 (0.2)	0.9 (0.2)	-	-	-	-	-	-	-	-	-	-
30	Isobutyric acid	79-31-2	27.776	1	-	-	-	5.66 (0.6)	1.92 (0.2)	-	-	1.61 (0.7)	-	5.4 (0.2)	4.76 (0.6)	-	-	-	-	-	1.03 (0.4)	-	3.45 (0.1)	1.95 (0.1)	-
31	Propanoic acid, 2-methyl-, 3-hydroxy-, 2,2,4-trimethylpentyl ester	77-68-9	38.727	3	3.20 (1.7)	3.22 (0.8)	1.05 (0.1)	-	-	-	-	-	-	3.16 (0.9)	-	-	-	-	-	-	-	-	2.95 (0.6)	-	-
32	2,2,4-Trimethyl-1,3-pentanediol diisobutyrate	6846-50-0	39.014	3	7.24 (0.5)	6.48 (0.5)	4.8 (4.8)	-	-	-	-	-	-	4.48 (1.2)	-	-	1.22 (0.3)	-	-	-	1.17 (0.3)	-	-	-	-
33	Butyl acetate	123-86-4	6.763	2	-	-	-	2.43 (0.4)	-	0.78 (0.2)	-	-	-	0.99 (0.1)	-	-	-	-	-	-	-	-	-	-	-
34	1,3-Di-tert-butylbenzene	1014-60-4	21.849	2	-	-	-	-	2.26 (0.1)	5.49 (0.4)	1.47 (0.1)	5.46 (0.4)	-	1.14 (0.2)	1.1 (0.0)	1.28 (0.0)	-	0.47 (0.1)	4.98 (0.9)	3.09 (0.0)	1.87 (0.4)	2.17 (0.4)	-	2.18 (0.1)	
35	Pyrazine, 2,6-diethyl-	13067-27-1	22.605	2	-	-	-	1.64 (0.1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	2-Acetylthiazole	24295-03-2	30.447	2	-	-	-	2.20 (0.1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	3-Methylbutanoic acid	503-74-2	31.666	1	-	-	-	14.95 (1.5)	21.29 (2.7)	5.73 (0.9)	8.44 (1.6)	8.79 (3.4)	3.71 (1.4)	11.74 (0.5)	16.11 (2.3)	1.74 (0.2)	-	-	-	3.44 (0.4)	6.80 (0.5)	3.4 (0.3)	9.08 (1.6)	1.13 (0.1)	2.25 (0.1)
38	Hexanoic acid	142-62-1	38.020	1	-	-	-	3.25 (0.2)	-	-	-	-	-	0.74 (0.3)	-	-	-	-	-	-	-	-	-	-	-
39	Octanoic acid	124-07-2	45.104	1	-	-	-	3.05 (0.1)	-	-	-	-	-	0.86 (0.0)	-	-	-	-	-	-	-	-	-	-	-
40	Nonanal	124-19-6	20.509	1	-	-	-	-	2.76 (1.5)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	Phenylethyl Alcohol	60-12-8	39.958	1	-	-	-	-	1.61 (0.2)	4.17 (0.2)	0.65 (0.0)	-	-	1.37 (0.0)	-	-	-	-	-	-	-	-	-	-	-
42	2-Pentanone	107-87-9	4.055	2	-	-	-	-	1.32 (0.2)	1.28 (0.0)	-	-	-	-	-	0.79 (0.3)	-	1.28 (0.1)	3.27 (0.4)	-	2.44 (0.1)	-	-	-	-
43	2-Heptanone	110-43-0	11.066	2	-	-	-	-	-	-	16.27 (0.7)	3.09 (0.2)	5.28 (0.3)	-	-	-	-	-	-	6.57 (0.7)	1.16 (0.0)	2.88 (0.3)	-	-	-



**Fig S1.**



**Fig S2.**



**Figure S1.** Principal component analysis (PCA) of volatile compounds obtained by HS-SPME and identified by GC/MS in *B. atrophaeus* L193 strain (L193), *B. velezensis* XT1 strain (XT1), *Peribacillus sp.* N3 strain (N3), *P. segetis* strain P6 (P6), *S. equorum* subsp. *equorum* EN21 strain (EN21) and *P. vulpis* Z8 strain (Z8) grouped by culture medium. (A-B) Score and loading plots of MOLP medium. (C-D) Score and loading plots of SG medium. (E-F) Score and loading plots of TSA medium. Each volatile compound is assigned to a reference number and can be checked in table S1.

**Figure S2.** Effects of the volatile organic compounds produced by *P. vulpis* Z8, *B. atrophaeus* L193 and *B. velezensis* XT1 cultured in MOLP medium and the synthetic compounds isopentanol and dimethyl disulphide (DMDS) on cherry fruits artificially inoculated with *M. laxa*, *M. fructicola* and *B. cinerea*. Control: control treatment, without bacterial VOCs or volatile synthetic compounds. IC: pathogen infection control, without VOCs treatment.