Supplementary Table. 3 Qualitative and relative quantification analysis of volatile compounds in the Processing of SNXM based on GC-MS

No.	Compounds	RI[a]	RI[b]	IM	Precursors	Relative Concents (μg/kg)				
						FL	SPL	PL	SHL	DL
	Alcohols (24)									
1	(*Z*)-3-Hexenol	858	852	MS, RI	Lipids /Glycosides	30.56 ± 0.93^{b}	42.8 ± 2.59^{a}	27.68 ± 2.65^{b}	17.36 ± 2.07^{c}	20.17 ± 3.47^{c}
2	(*Z*)-2-Hexenol	862	861	MS, RI	Lipids	nd	nd	nd	nd	2.15 ± 0.2^{a}
3	Hexanol	867	867	MS, RI, S	Lipids	9.26 ± 0.56^{b}	12.58 ± 1.06^{a}	5.61 ± 0.9^{c}	4.51 ± 0.73^{c}	6.87 ± 1.32^{bc}
4	1-Heptanol	969	968	MS, RI	Lipids	8.34 ± 1.81^{a}	9.18 ± 1.03^{a}	0.78 ± 0.14^{b}	0.48 ± 0.14^{b}	0.77 ± 0.16^{b}
5	1-Octen-3-ol	979	978	MS, RI, S	Lipids	2.64 ± 0.21^{b}	3.06 ± 0.21^{ab}	3.44 ± 0.43^{ab}	3.31 ± 0.94^{ab}	4.24 ± 0.41^{a}
6	Benzyl alcohol	1033	1030	MS, RI	Glycosides	5.83 ± 0.34^{b}	9.16 ± 0.27^{a}	2.16 ± 0.03^{c}	2.19 ± 0.02^{c}	4.93 ± 0.95^{b}
7	(*E*)-2-Octen-1-ol	1067	1063	MS, RI	Lipids	nd	nd	0.76 ± 0.1^{a}	0.97 ± 0.29^{a}	0.77 ± 0.05^{a}
8	(*Z*)-Linalool oxyde (furanoid)	1065	1067	MS, RI	Glycosides/Terpenoid biosynthesis	27.05 ± 3.22^{a}	27.86 ± 3.18^{a}	13 ± 1.26^{b}	10.86 ± 1.69^{b}	13.03 ± 1.78^{b}
9	(*E*)-Linalool oxide (furanoid)	1087	1083	MS, RI	Glycosides/Terpenoid biosynthesis	40.73 ± 0.67^{a}	43.57 ± 2.71^{a}	9.25 ± 0.68^{bc}	5.59 ± 1.16^{c}	12.11 ± 1.41^{b}
10	Linalool	1098	1096	MS, RI, S	Lipids/Glycosides /Terpenoid biosynthesis	52.48 ± 0.2^{a}	60.49 ± 7.33^{a}	13.9 ± 2.41^{b}	8.77 ± 1.95^{b}	16.62 ± 0.99^{b}
11	Phenylethyl Alcohol	1114	1107	MS, RI	Glycosides	13.7 ± 1.09^{a}	13.45 ± 0.73^{a}	3.58 ± 0.35^{c}	3.9 ± 0.4^{bc}	5.78 ± 1.16^{b}
12	(*Z*)-3-Nonen-1-ol	1152.8	1147	MS, RI	Lipids	0.93 ± 0.21^{a}	1.15 ± 0.23^{a}	0.09 ± 0.02^{b}	0.05 ± 0.01^{b}	0.06 ± 0.03^{b}
13	(*Z*)-Linalool oxide (pyranoid)	1174	1163	MS, RI	Glycosides/terpenoid biosynthesis	1.51 ± 0.08^{c}	2.48 ± 0.28^{b}	1.67 ± 0.07^{bc}	1.86 ± 0.1^{bc}	4.05 ± 0.7^{a}
14	1-Nonanol	1171	1165	MS, RI	Lipids	5.89 ± 0.25^{a}	8.61 ± 2.68^{a}	0.62 ± 0.11^{b}	nd	nd
15	(*E*)-Linalool oxide (pyranoid)	1183	1168	MS, RI	Glycosides/terpenoid biosynthesis	10.68 ± 2.06^{ab}	14.7 ± 1.37^{a}	9.53 ± 0.33^{b}	7.79 ± 0.68^{b}	11.25 ± 2.24^{ab}
16	*α*-Terpineol	1191	1188	MS, RI	Terpenoid biosynthesis	nd	1.08 ± 0.18^{a}	0.43 ± 0.05^{b}	0.5 ± 0.1^{b}	0.88 ± 0.09^{a}
17	Nerol	1229	1216	MS, RI	Glycosides	1.58 ± 0.35^{a}	2.14 ± 0.53^{a}	0.27 ± 0.01^{b}	0.22 ± 0.05^{b}	0.33 ± 0.02^{b}
18	Geraniol	1254	1243	MS, RI, S	Glycosides/Terpenoid biosynthesis	40.39 ± 3.68^{b}	64.93 ± 7.07^{a}	10.19 ± 0.86^{c}	7.52 ± 2.43^{c}	11.84 ± 1.51^{c}
19	1-Decanol	1274	1263	MS, RI	Lipids	0.31 ± 0.08^{a}	0.26 ± 0.04^{a}	nd	nd	nd
20	(*E*)-Nerolidol	1544	1543	MS, RI	Lipids	1.55 ± 0.07^{b}	2.49 ± 0.23^{b}	1.44 ± 0.12^{b}	1.48 ± 0.39^{b}	4.29 ± 0.78^{a}
21	*τ*-Muurolol	1648	1636	MS, RI	Terpenoid biosynthesis	0.38 ± 0.03^{b}	0.66 ± 0.06^{ab}	0.56 ± 0.04^{ab}	0.52 ± 0.2^{ab}	0.72 ± 0.17^{a}

22	1-Tetradecanol	1679	1684	MS, RI	Lipids	0.4 ± 0.04^{b}	0.57 ± 0.19^{ab}	0.51 ± 0.05^{ab}	0.81 ± 0.26^{a}	0.59 ± 0.07^{ab}
23	1-Hexadecanol	1871	1859	MS, RI	Lipids	0.18 ± 0.02^{b}	0.15 ± 0.01^{ab}	0.18 ± 0.04^{ab}	0.2 ± 0.03^{a}	0.1 ± 0.03^{ab}
24	Phytol	2111	2108	MS, RI	Chlorophyll degradation	0.07 ± 0.03^{b}	0.1 ± 0.02^{b}	0.2 ± 0.04^{b}	0.25 ± 0.03^{b}	0.66 ± 0.21^{a}
	Aldehydes (14)									
25	Hexanal	800	800	MS, RI, S	Lipids	14.52 ± 1.57^{a}	14.52 ± 1.26^{a}	16.02 ± 2.81^{a}	13.06 ± 0.66^{a}	13.01 ± 2.32^{a}
26	(*E*)-2-hexenal	850	850	MS, RI, S	Lipids	4.52 ± 0.34^{a}	2.73 ± 0.14^{b}	nd	nd	nd
27	Heptanal	903	900	MS, RI, S	Lipids	27.15 ± 1.28^{a}	22.8 ± 4.33^{a}	20.81 ± 4.34^{ab}	10.06 ± 2.34^{b}	20.77 ± 7.84^{ab}
28	(*E*)-2-Heptenal	953	954	MS, RI	Lipids	0.62 ± 0.07^{d}	0.66 ± 0.12^{cd}	1.29 ± 0.17^{bc}	2.13 ± 0.5^{a}	1.49 ± 0.09^{ab}
29	Benzaldehyde	958	958	MS, RI	Glycosides	3.29 ± 0.14^{ab}	4.2 ± 1.15^{a}	1.7 ± 0.2^{a}	1.92 ± 0.16^{bc}	3.1 ± 0.42^{abc}
30	Octanal	1002	1000	MS, RI, S	Lipids	1.89 ± 0.2^{b}	nd	nd	1.96 ± 0.52^{b}	2.99 ± 0.49^{a}
31	(*E*,*E*)-2,4-Heptadienal	1007	1008	MS, RI	Lipids	0.04 ± 0.01^{c}	0.02 ± 0.01^{c}	0.15 ± 0^{c}	0.71 ± 0.13^{b}	0.92 ± 0.35^{a}
32	Benzeneacetaldehyde	1042	1040	MS, RI, S	Amino acids/Sugars	0.64 ± 0.06^{ab}	0.35 ± 0.24^{ab}	0.23 ± 0.18^{b}	0.48 ± 0.07^{ab}	0.82 ± 0.24^{a}
33	Nonanal	1105	1100	MS, RI, S	Lipids	19.66 ± 0.97^{ab}	23.01 ± 2.1^{a}	13.17 ± 1.78^{cd}	9.61 ± 2.04^{d}	15.72 ± 1.7^{bc}
34	(*E*)-2-Nonenal	1159	1154	MS, RI, S	Lipids	0.56 ± 0.04^{a}	0.7 ± 0.1^{a}	0.35 ± 0.02^{b}	0.31 ± 0.09^{b}	0.55 ± 0.03^{a}
35	Decanal	1206	1197	MS, RI	Lipids	1.14 ± 0.17^{ab}	1.54 ± 0.11^{a}	0.9 ± 0.3^{b}	0.68 ± 0.17^{b}	1.05 ± 0.18^{ab}
36	(*Z*)-Neral	1239	1229	MS, RI, S	Glycosides	0.59 ± 0.06^{a}	0.6 ± 0.11^{a}	0.67 ± 0.08^{a}	0.87 ± 0.23^{a}	0.89 ± 0.13^{a}
37	Citral	1276	1257	MS, RI	Glycosides	2.25 ± 0.18^{a}	2.31 ± 0.41^{a}	0.53 ± 0.03^{c}	0.41 ± 0.12^{c}	1.21 ± 0.16^{b}
38	Dodecanal	1405	1395	MS, RI	Lipids	0.6 ± 0.1^{ab}	0.54 ± 0.07^{ab}	0.48 ± 0.04^{b}	0.54 ± 0.12^{ab}	0.77 ± 0.1^{a}
	Esters (19)									
39	Butyl acrylate	902	894	MS, RI, S	Lipids (Acid-alcohol esterification)	11.96 ± 2.01^{a}	9.83 ± 0.22^{a}	8.61 ± 0.75^{ab}	5.34 ± 0.51^{b}	8.37 ± 2.2^{ab}
40	Butyl butanoate	994	993	MS, RI	Lipids (Acid-alcohol esterification)	1.56 ± 0.05^{a}	1.6 ± 0.2^{a}	1.27 ± 0.27^{a}	1.43 ± 0.21^{a}	1.75 ± 0.35^{a}
41	Ethyl hexanoate	996	996	MS, RI, S	Lipids (Acid-alcohol esterification)	3.09 ± 0.09^{b}	5.03 ± 0.49^{a}	0.98 ± 0.21^{c}	0.53 ± 0.14^{c}	0.95 ± 0.17^{c}
42	(*Z*)-3-Hexenyl acetate	1010	1002	MS, RI	Lipids (Acid-alcohol esterification)	19.93 ± 1.77^{b}	39.39 ± 3.21^{a}	13.62 ± 1.73^{c}	3.39 ± 0.61^{d}	3.9 ± 0.41^{d}
43	(*Z*)-3-Hexenyl butyrate	1186	1177	MS, RI	Lipids (Acid-alcohol esterification)	3.86 ± 0.4^{bc}	18.44 ± 1.54^{a}	4.19 ± 0.85^{b}	1.28 ± 0.4^{d}	1.85 ± 0.27^{cd}
44	Methyl salicylate	1187	1185	MS, RI, S	Glycosides	7.75 ± 2.65^{a}	9.14 ± 1.38^{a}	3.06 ± 0.45^{b}	1.66 ± 0.3^{b}	3.31 ± 0.2^{b}
45	Octanoic acid, ethyl ester	1195	1188	MS, RI	Lipids (Acid-alcohol esterification)	1.04 ± 0.12^{a}	nd	nd	nd	nd

46	(*Z*)-3-Hexenyl valerate	1235.8	1221	MS, RI	Lipids (Acid-alcohol esterification)	2.46 ± 0.36^{b}	7.97 ± 0.65^{a}	1.59 ± 0.29^{bc}	0.77 ± 0.19^{c}	1.08 ± 0.11^{c}
47	(*Z*)-3-Hexenyl hexanoate	1376	1367	MS, RI, S	Lipids (Acid-alcohol esterification)	4.15 ± 0.39^{c}	21.33 ± 2.02^{a}	7.83 ± 1.36^{b}	3.54 ± 1.31^{c}	5.99 ± 0.93^{bc}
48	(*Z*)-3-Hexenyl (*Z*)-3-hexenoate	1388.8	1370	MS, RI	Lipids (Acid-alcohol esterification)	0.6 ± 0.22^{c}	1.05 ± 0.08^{ab}	1.17 ± 0.17^{a}	0.64 ± 0.14^{bc}	0.81 ± 0.13^{abc}
49	Hexyl hexanoate	1384	1372	MS, RI	Lipids (Acid-alcohol esterification)	nd	1.15 ± 0.19^{ab}	0.5 ± 0.11^{bc}	0.85 ± 0.29^{ab}	1.5 ± 0.57^{a}
50	(*E*)-2-Hexenyl hexanoate	1391	1375	MS, RI	Lipids (Acid-alcohol esterification)	0.12 ± 0.01^{d}	0.65 ± 0.08^{b}	0.42 ± 0.06^{c}	0.23 ± 0.09^{cd}	0.98 ± 0.13^{a}
51	Methyl jasmonate	1644	1632	MS, RI	Lipids	0.5 ± 0.08^{b}	0.99 ± 0.14^{a}	0.58 ± 0.03^{b}	0.59 ± 0.17^{b}	1.06 ± 0.22^{a}
52	Tetradecanoic acid, ethyl ester	1793	1785	MS, RI	Lipids (Acid-alcohol esterification)	nd	0.19 ± 0.04^{a}	nd	nd	nd
53	Hexadecanoic acid, methyl ester	1920	1919	MS, RI	Lipids (Acid-alcohol esterification)	0.08 ± 0.03^{b}	0.13 ± 0.02^{ab}	0.1 ± 0.02^{ab}	0.14 ± 0.05^{ab}	0.19 ± 0.06^{a}
54	Hexadecanoic acid, ethyl ester	1993	1988	MS, RI	Lipids (Acid-alcohol esterification)	0.17 ± 0.04^{a}	0.21 ± 0.08^{a}	nd	0.13 ± 0.03^{a}	0.1 ± 0.03^{ab}
55	Linoleic acid ethyl ester	2159	2158	MS, RI	Lipids (Acid-alcohol esterification)	0.05 ± 0.01^{a}	nd	nd	nd	nd
56	Linolenic acid, ethyl ester	2173	2164	MS, RI	Lipids (Acid-alcohol esterification)	0.1 ± 0.04^{ab}	0.15 ± 0.05^{a}	nd	0.04 ± 0.01^{bc}	0.08 ± 0.02^{ab}
	Ketones (7)									
57	1-Octen-3-one	979	974	MS, RI	Lipids	nd	nd	nd	1.13 ± 0.23^{a}	nd
58	3-Octen-2-one	1037	1033	MS, RI	Lipids	nd	nd	0.4 ± 0.07^{a}	nd	nd
59	3,5-Octadien-2-one	1081	1065	MS, RI	Lipids	1.31 ± 0.16^{b}	1.75 ± 0.21^{a}	nd	nd	nd
60	(*Z*)-Jasmone	1396	1379	MS, RI, S	Lipids	7.16 ± 0.6^{b}	10.38 ± 1^{a}	5.88 ± 0.17^{b}	4.67 ± 1.24^{b}	11.25 ± 1.93^{a}
61	*α*-Ionone	1421	1408	MS, RI	Carotenoids	0.63 ± 0.05^{b}	0.67 ± 0.09^{b}	0.5 ± 0.03^{b}	0.49 ± 0.12^{b}	0.93 ± 0.14^{a}
62	Geranylacetone	1432	1433	MS, RI	Carotenoids	1.28 ± 0.11^{ab}	1.4 ± 0.15^{a}	1.03 ± 0.09^{b}	0.94 ± 0.19^{b}	1.56 ± 0.06^{a}
63	(*E*)-β-Ionone	1469	1465	MS, RI, S	Carotenoids	0.96 ± 0.03^{b}	1.44 ± 0.12^{a}	0.73 ± 0.16^{b}	0.63 ± 0.18^{b}	0.68 ± 0.13^{b}
	Hydrocarbons (15)									
64	Styrene	890	889	MS, RI, S	Amino acids/Sugars	7.16 ± 0.54^{a}	4.76 ± 0.48^{b}	2.56 ± 0.54^{cd}	1.91 ± 0.26^{d}	3.83 ± 0.8^{bc}
65	*β*-Myrcene	992	988	MS, RI	Terpenoid biosynthesis	9.91 ± 1.92^{a}	12.89 ± 2^{a}	3.71 ± 0.27^{b}	3.81 ± 0.28^{b}	4.97 ± 0.8^{b}
66	*α*-Terpinene	1017	1014	MS, RI	Terpenoid biosynthesis	0.18 ± 0.03^{a}	0.07 ± 0.02^{b}	nd	nd	nd
67	Limonene	1030	1027	MS, RI	Terpenoid biosynthesis	4.42 ± 0.67^{b}	4.74 ± 0.68^{a}	1.79 ± 0.37^{c}	1.49 ± 0.35^{c}	1.77 ± 0.11^{c}
68	3-Carene	1016.3	1033	MS, RI	Terpenoid biosynthesis	1.33 ± 0.21^{a}	nd	nd	nd	nd
69	(*Z*)-β-Ocimene	1051	1044	MS, RI	Terpenoid biosynthesis	2.78 ± 0.62^{a}	2.99 ± 0.44^{a}	0.74 ± 0.12^{b}	0.72 ± 0.15^{b}	nd

70	(*E*)-4,8-Dimethylnona-1,3,7-triene	1116.9	1108	MS, RI	Terpenoid biosynthesis	nd	nd	nd	nd	1.45 ± 0.26^{a}
71	(4*E*,6*Z*)-allo-ocimene	1131	1123	MS, RI	Terpenoid biosynthesis	1.67 ± 0.48^{a}	1.87 ± 0.5^{a}	0.57 ± 0.04^{b}	0.39 ± 0.11^{b}	0.68 ± 0.03^{b}
72	*α*-Cubebene	1354	1337	MS, RI	Terpenoid biosynthesis	0.34 ± 0.02^{b}	0.62 ± 0.07^{a}	0.52 ± 0.04^{ab}	0.56 ± 0.19^{ab}	0.52 ± 0.09^{ab}
73	(*E*)-β-Famesene	1453	1439	MS, RI	Terpenoid biosynthesis	0.43 ± 0.04^{b}	0.61 ± 0.04^{b}	0.4 ± 0.04^{b}	0.43 ± 0.14^{b}	1.32 ± 0.07^{a}
74	1-Pentadecene	1489	1479	MS, RI	Lipids	0.67 ± 0.01^{c}	0.88 ± 0.12^{ab}	0.75 ± 0.06^{bc}	nd	1 ± 0.11^{a}
75	*γ*-Cadinene	1493	1483	MS, RI	Terpenoid biosynthesis	nd	0.63 ± 0.09^{a}	nd	0.73 ± 0.21^{a}	nd
76	*δ*-Cadinene	1508	1505	MS, RI	Terpenoid biosynthesis	0.53 ± 0.02^{c}	0.94 ± 0.12^{bc}	1.28 ± 0.1^{b}	1.48 ± 0.46^{ab}	1.92 ± 0.18^{a}
77	(*E*)-Calamenene	1509	1507	MS, RI	Terpenoid biosynthesis	0.93 ± 0.18^{a}	1.17 ± 0.19^{a}	1.53 ± 0.1^{a}	1.11 ± 0.38^{a}	1.67 ± 0.55^{a}
78	*α*-Calacorene	1524	1526	MS, RI	Terpenoid biosynthesis	0.3 ± 0.09^{a}	0.42 ± 0.02^{a}	0.36 ± 0.02^{a}	0.34 ± 0.12^{a}	0.48 ± 0.08^{a}
	Acids (3)									
79	Heptanoic acid	1078	1074	MS, RI	Lipids	0.47 ± 0.07^{b}	1.27 ± 0.43^{a}	0.03 ± 0.01^{b}	nd	0.15 ± 0.02^{b}
80	Nonanoic acid	1271	1256	MS, RI	Lipids	nd	nd	0.26 ± 0.04^{a}	0.3 ± 0.04^{a}	nd
81	n-Hexadecanoic acid	2003	2018	MS, RI	Lipids	0.05 ± 0.01^{a}	0.06 ± 0.01^{a}	0.06 ± 0.01^{a}	0.08 ± 0.02^{a}	0.1 ± 0.02^{a}
	Others (5)									
82	Benzyl nitrile	1046	1043	MS, RI	Glycosides, Amino acids/Sugars	0.2 ± 0.11^{a}	0.33 ± 0.17^{a}	0.16 ± 0.02^{a}	0.17 ± 0^{a}	0.3 ± 0.04^{a}
83	Indole	1140	1130	MS, RI, S	Amino acids/Sugars	5.08 ± 0.44^{b}	3.65 ± 0.48^{bc}	2.74 ± 0.06^{c}	2.32 ± 0.42^{c}	9.26 ± 1.5^{a}
84	1-Ethyl-1H-pyrrole-2-carbaldehyde	1289	1280	MS, RI	Amino acids/Sugars	nd	nd	nd	nd	2.06 ± 0.1^{a}
85	1-Methylnaphthalene	1299.1	1285	MS, RI	Others	0.34 ± 0.02^{ab}	0.36 ± 0.07^{a}	0.22 ± 0.02^{c}	0.23 ± 0.04^{bc}	0.05 ± 0.03^{d}
86	2,6-Dimethylnaphthalene	1408	1405	MS, RI	Others	nd	0.18 ± 0.02^{a}	nd	nd	nd
	Total					437.48 ± 12.42^{b}	566.82 ± 39.37^{a}	232.26 ± 23.97^{c}	166.39 ± 24.83^{d}	263.38 ± 33.57^{c}

Note: Data are “mean ± standard deviation”. Different superscript letters in the same row indicate significant differences in compound levels ($P < 0.05$); nd denotes that the compound was not detected; RIa represents the retention index calculated based on the HP-5MS capillary column; RIb represents the retention index calculated using the compound retention time with n-alkanes (C6–C40); IM denotes the identification method: MS indicates identification based on the NIST 2017 mass spectral database, RI indicates identification by retention index matching, and S indicates identification using reference standards. FL: Fresh Leaves; SPL: Spreading Leaves; PL: Fixation Leaves; SHL: Shaping Leaves; DL: Dried Leaves (representing the finished tea).