Easy Concentration & Analysis of Fresh and Spoiled Cabbage by MonoTrap® - Thermal Desorption

Using MonoTrap RGC18TD containing graphite carbon, the volatile compounds of fresh and spoiled cabbage are determined by screening analysis.

Protocol

Cabbege — Put 25g of chopped cabbage into a 100mL vial

Spoiling Stage — Leave it at 60 ℃ for 3 – 7 days

Passive Sampling
MonoTrap RGC18TD × 2pcs — Room temperature For 3 hours

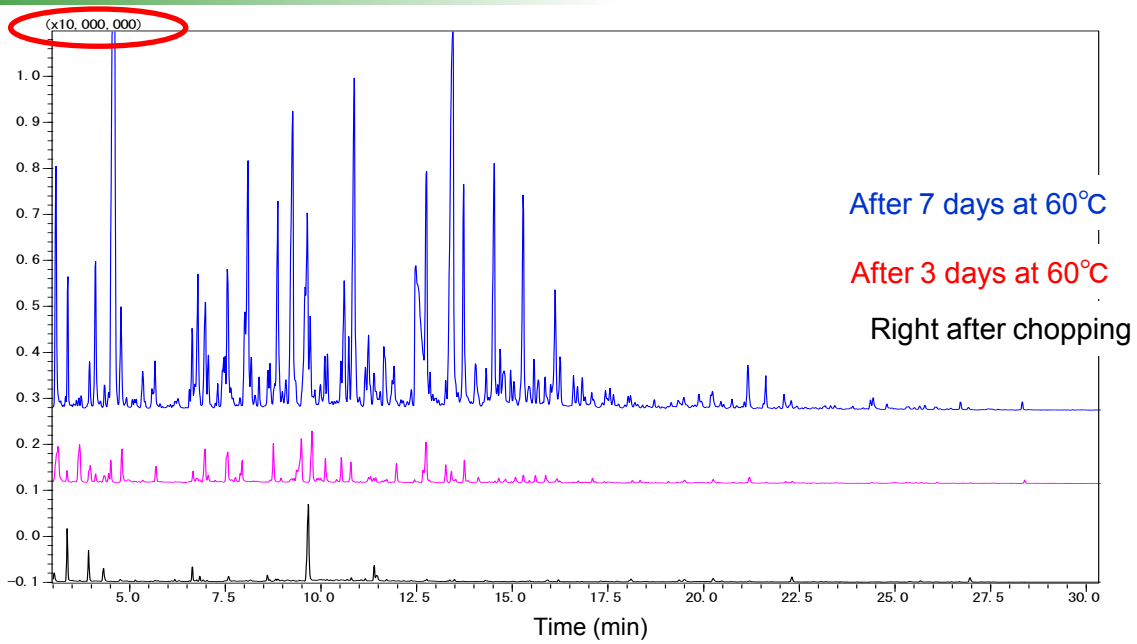
TD-GC/MS-O

<Left> Freshly chopped

<Right> After 3 days at 60℃

GCO Sniffing Port (OP275)

Spoiling Stage & Volatile Compouds

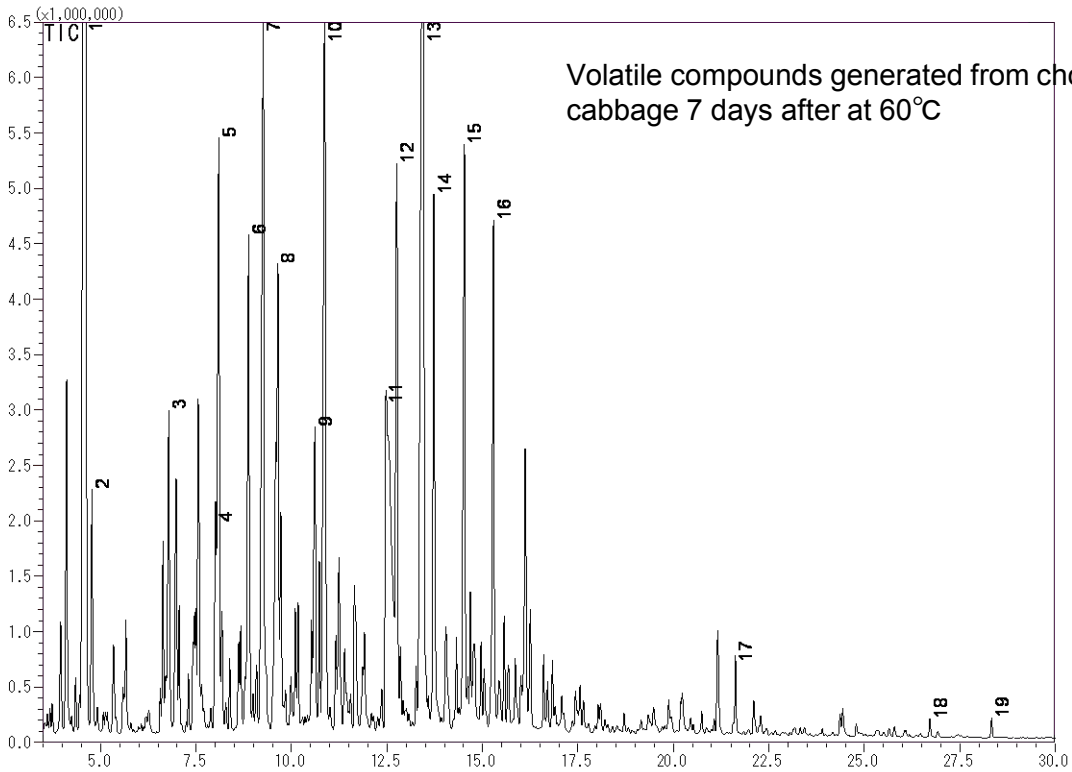


GC Conditions

System	: GC/MS-Thermal Desorption (T-Dex Ⅱ)
Column	: InertCap Pure-WAX 0.25 mm I.D. × 60 m, df = 0.25μm
Col.Temp.	: 40℃(5 min) - 6℃/min - 250℃
Carrier Gas	: He, 1mL/min (constant flow)
Desorb Temp.	: 200℃
Time	: 5 min
Flow	: 5mL/min
Split	: Splitless
Cryo Trapping	: -150℃
Injection Temp.	: 250℃
Detection	: MS Scan (28.5 - 600 m/z)

Split the capillary column outlet and simultaneous measurement by GC/MS and GC/O. The sensitivity of MS is 1/10 of ordinal detectors. Due to the graphite carbon effect, SN compounds can be effectively detected.

Organoleptic Data of Volatile Compounds from Spoiled Cabbage



Volatile compounds generated from chopped cabbage 7 days after at 60℃

	Compound	Smell
1.	Dimethyl disulfide	Spoiled egg
2.	Hexanal	Fresh
3.	2-Heptanone	
4.	1-Butanol, 2-methyl-	Raw garbage
5.	1-Butanol, 3-methyl-	Bitter
6.	1-Pentanol	Fresh
7.	Hexanenitrile	Spoiled
8.	2-Butanone, 3-hydroxy-	
9.	Dimethyl trisulfide	Spoiled
10.	1-Hexanol	Irritating
11.	Acetic acid	Sour
12.	1-Octen-3-ol e alcohol	
13.	Hexane, 1-nitro-	Metal
14.	Benzaldehyde	
15.	4-Hexen-1-ol,	
16.	Benzonitrile	Bitter
17.	S-Methyl methanethiosulphonate	Spoiled
18.	(2,6,6-Trimethyl-2-hydroxycyclohexylidene)-acetic acid lactone	
19.	Indole	Foul

GL Sciences Inc.