

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

Cabbage

Put 25 g of chopped cabbage into a 100 mL vial

Spoiling Stage

Leave it at 60 °C
for 3 – 7 days

Passive Sampling
MonoTrap RGC18TD×2 pcs

Room
temperature
For 3 hours

TD-GC/MS-O



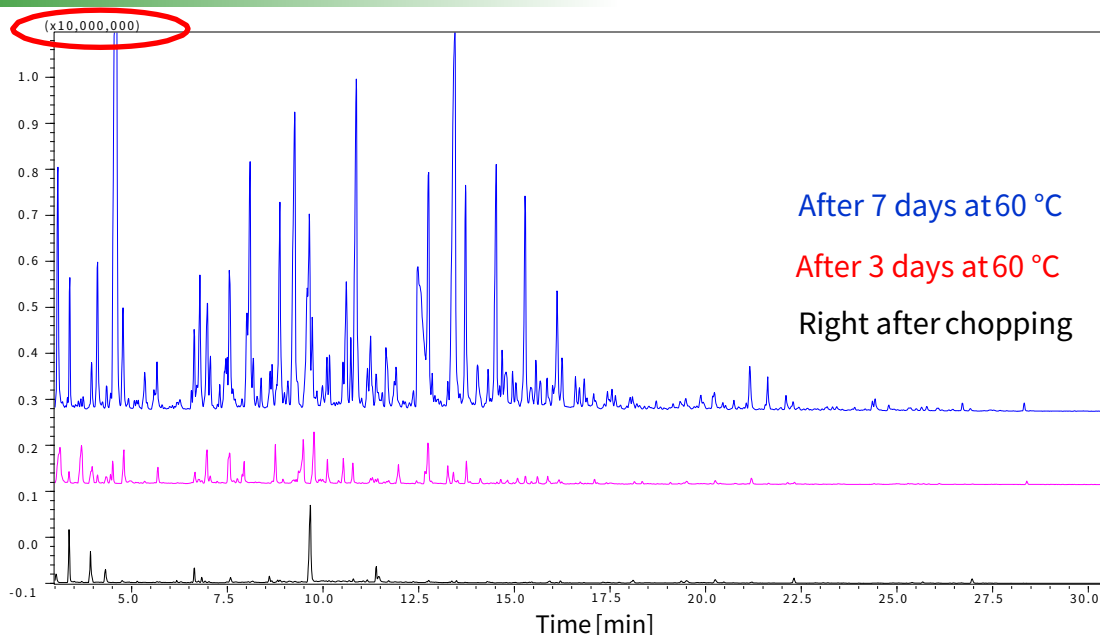
<Left>
Freshly
chopped

<Right>
After 3 days
at 60 °C



GCO Sniffing Port (OP275)

Spoiling Stage & Volatile Compounds



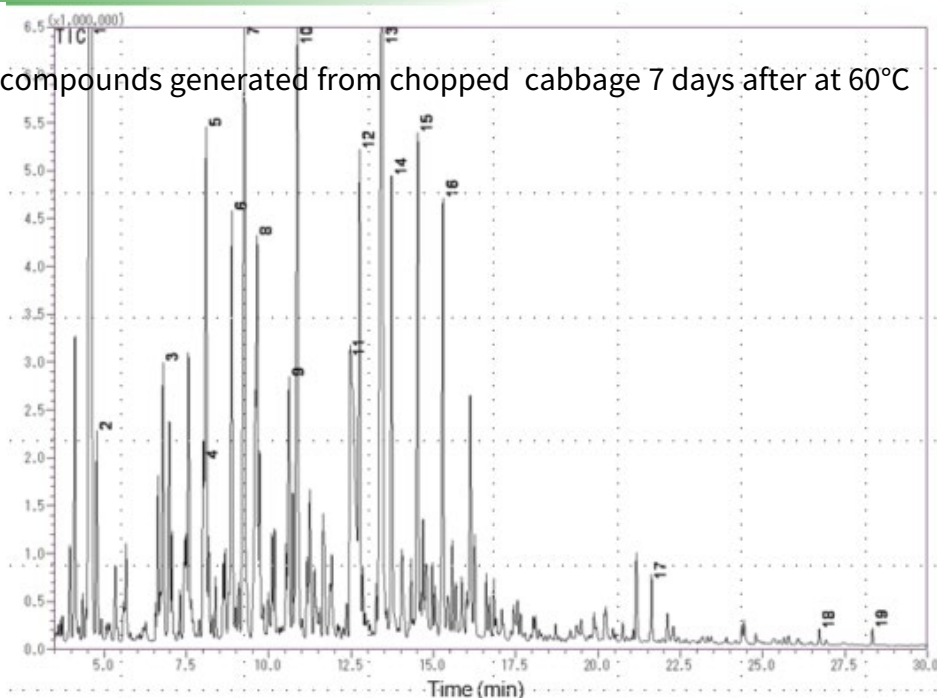
GC Conditions

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

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°C



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

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