GT070
GL Sciences Inc.

Simple Concentration and Analysis of Cabbage Spoilage Odor –Use of Sorptive Media Mono Trap

MonoTrap RGC18TD , a simple concentration tool was used to screen for volatile components in spoiled cabbage. At the same time sensory evaluation was performed on these odors.

Pretreatment procedure

Cabbage

And chicken, place 25 g in 100 mL vials

Decay

Allow to stand at 60 ˚C for a period of time (3 to 7 days) and rot

Collection (HS)
2 MonoTrap RGC18TD

At room temperature for 3 h

TD-GC-MS
Odor

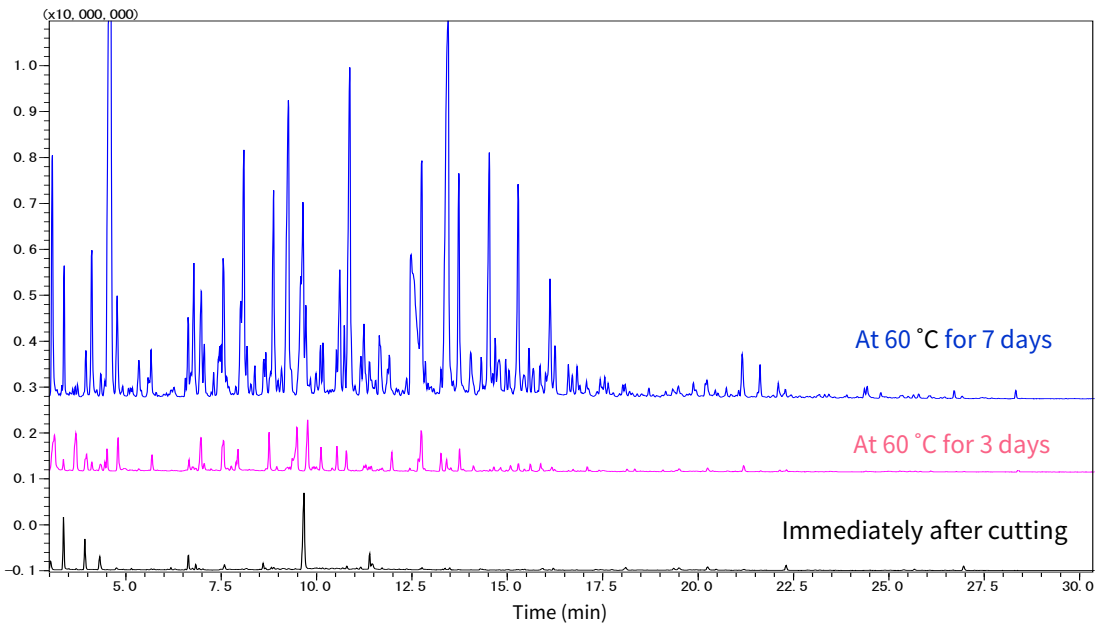
60 ˚C for 3 days
Immediately after cutting

Odor-sniffing device
Sniffing pot (OP275)

Conditions

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

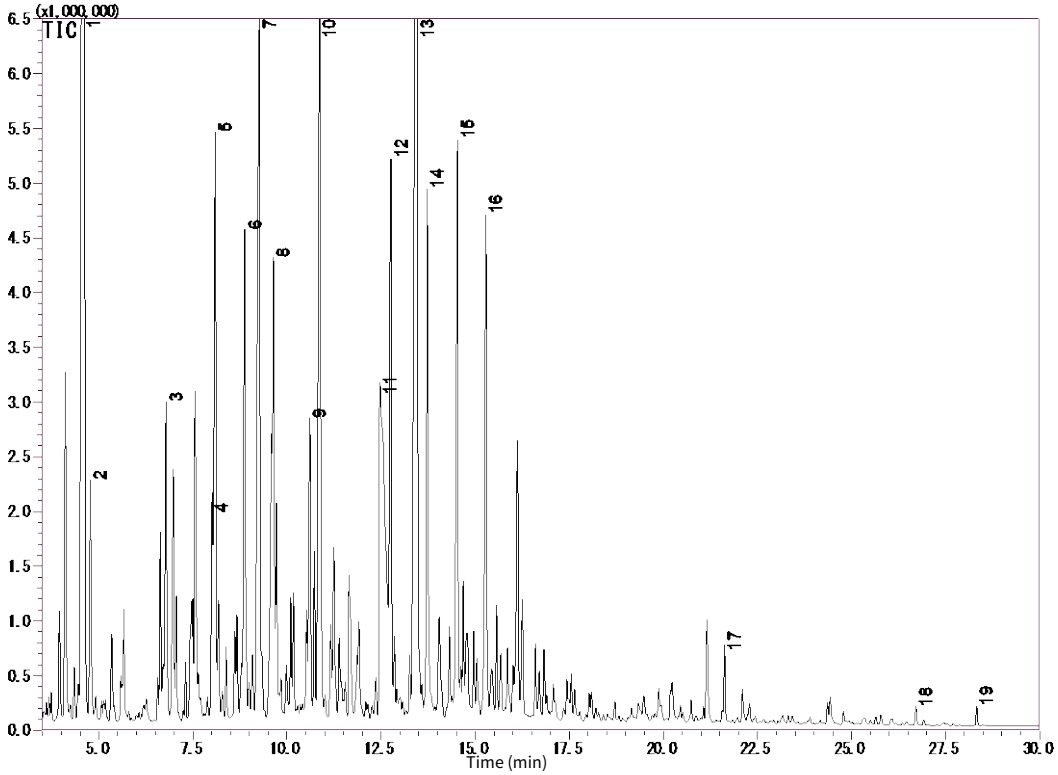
Comparison of volatile constituents with advancing spoilage



The outlet of the capillary column was split so that GC/MS and GC/O (GC/Olfactometry) could be measured simultaneously. Due to the splitting of the flow, the detection sensitivity is approx. 1/10th of normal. S and N based compounds can also be well detected by the effects of graphite carbon contained in the MonoTrap RGC18TD.

collector

Volatile components of cabbage at 60 ˚C for 7 days



Peak No.	Compound	Assessment of odor	Peak No.	Compound	Assessment of odor
1.	Dimethyl disulfide	Rotten egg	11.	Acetic acid	Sour
2.	Hexanal	Greenly	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	Greenly	16.	Benzonitrile	Bitter
7.	Hexanenitrile	Bitter	17.	S-Methyl methanethiosulphonate	Putrid odor
8.	2-Butanone, 3-hydroxy-		18.	(2,6,6-Trimethyl-2-hydroxycyclohexylidene)-acetic acid lactone	
9.	Dimethyl trisulfide	Putrid odor	19.	Indole	Fecal
10.	1-Hexanol	Pungent odor			

* Standard samples are not used for qualitative analysis. Results from a library search.
Red letters: strong odor

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