3.2 Analysis of Pesticides Using NCI (1) - *GCMS*

•Explanation

Trace analysis is required for the measurement of residual pesticides in vegetables and fruits, but it is difficult to extract only pesticides, even after a cleanup pretreatment. NCI is an effective method for this analysis.

Generally, positive ions are detected in mass spectrometry, but negative-ion analysis may be used depending on the compound. The negative ions of such compounds allow microanalysis with minimal interference from the matrix. Trace amount of pesticides that cannot be detected using the conventional EI method can be detected by this method.

•Analytical Conditions

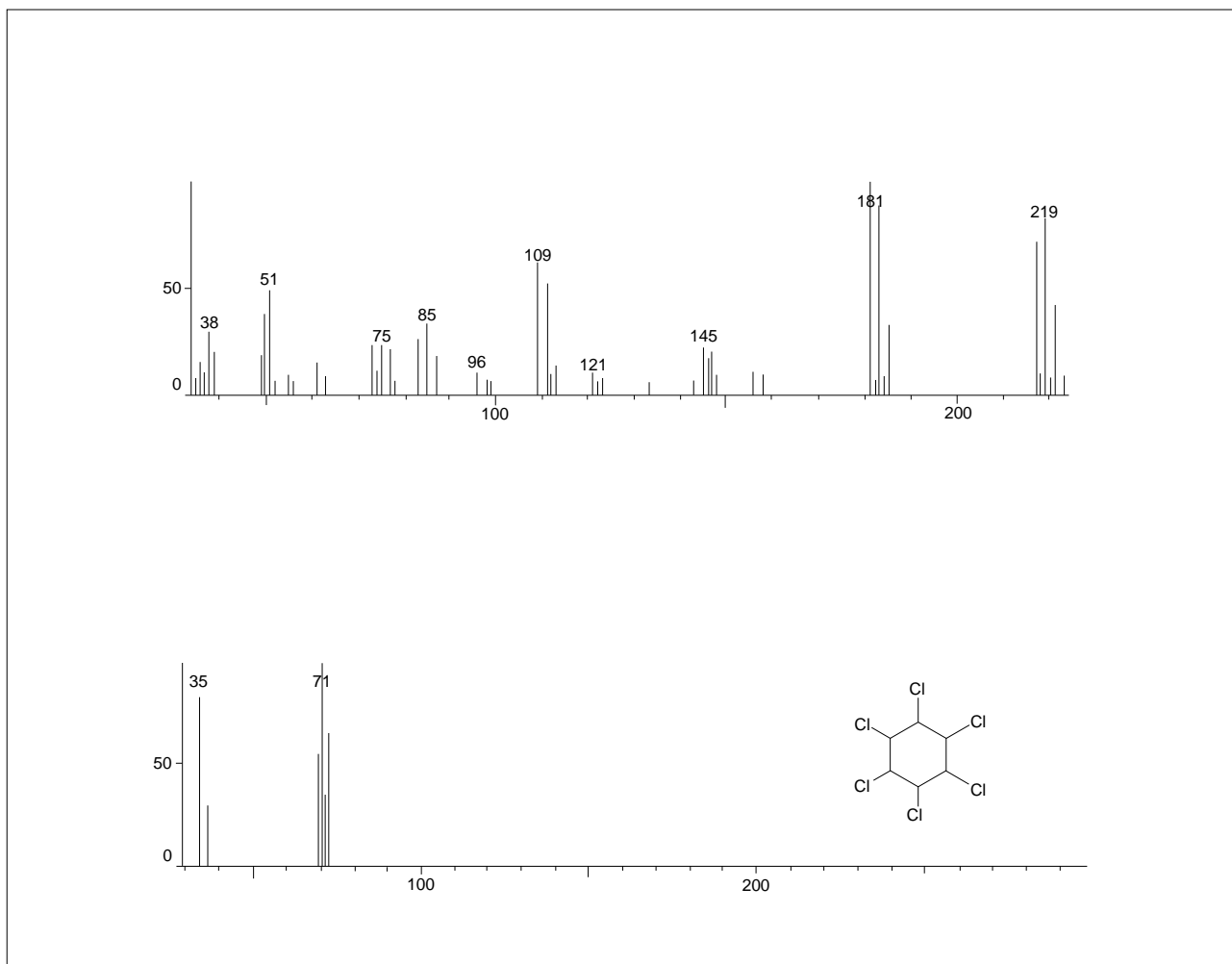|	
Instrument	: GCMS-QP5050A
Column	: DB-1 0.25mm × 30m df=0.25μm
Col.Temp.	: 50˚C(2min)-130˚C(20˚C/min)
	-300˚C(3˚C/min)(7min)
Inj.Temp.	: 280˚C
I/F Temp.	: 280˚C
Carrier Gas	: 120kPa(2min)-250kPa(2kPa/min)

Fig. 3.2.1 α-BHC mass spectrum (upper: EI, lower: NCI)

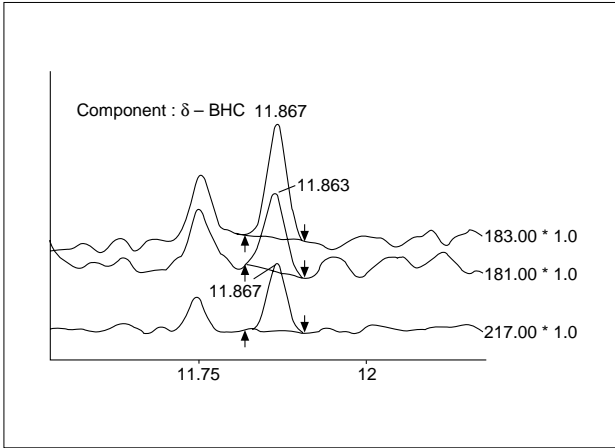# 3.2 Analysis of Pesticides Using NCI (2) - *GCMS*

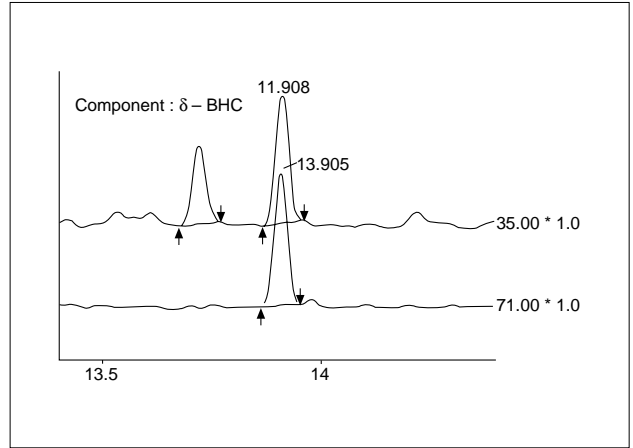Fig. 3.2.2 SIM chromatogram using EI

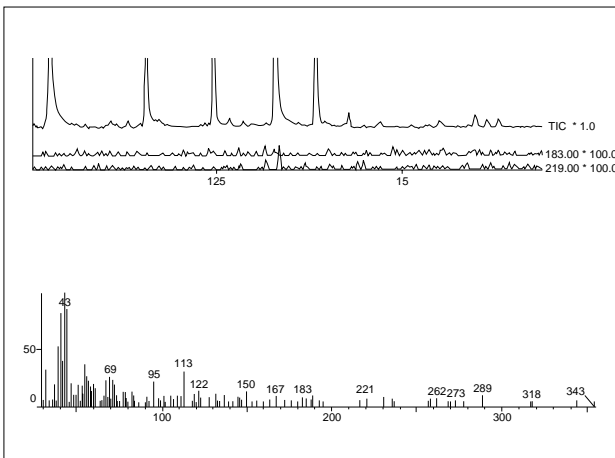
Fig. 3.2.3 SIM chromatogram using NCI

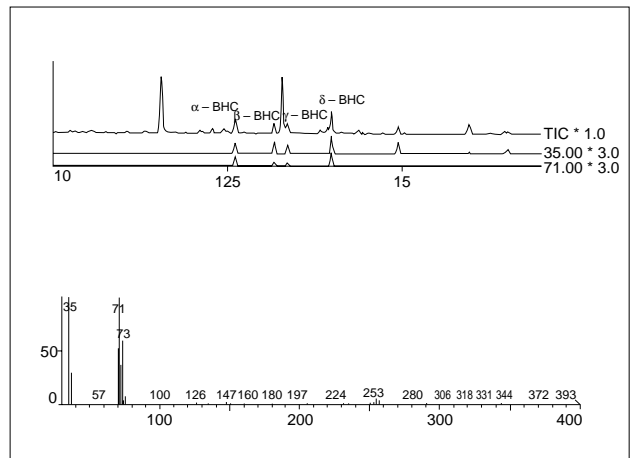Fig. 3.2.4 MC and mass spectrum using EI
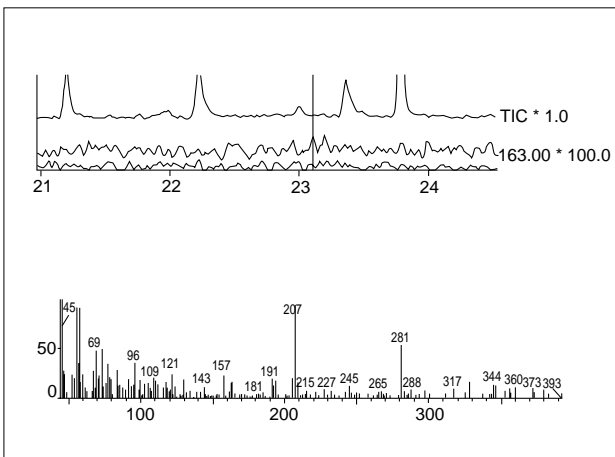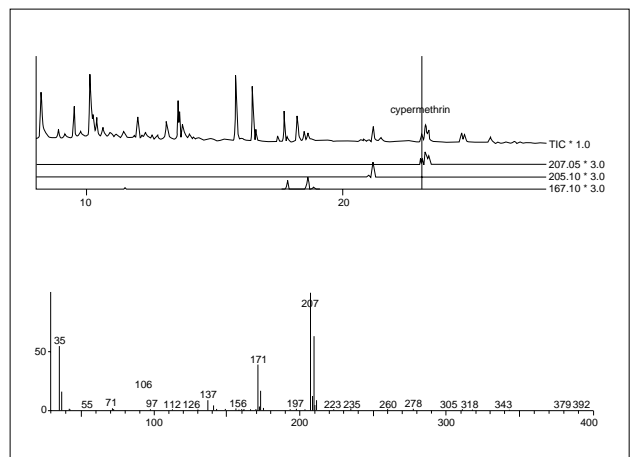

Fig. 3.2.5 MC and mass spectrum using NCI

Fig. 3.2.6 MC and mass spectrum using EI

Fig. 3.2.7 MC and mass spectrum using NCI