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APPENDIX

Library Search C:\SATURN\THAI4 Acquired: Jul-22-1992 Scan number 312
 Comment: OIL1 DIL1:100 1UL

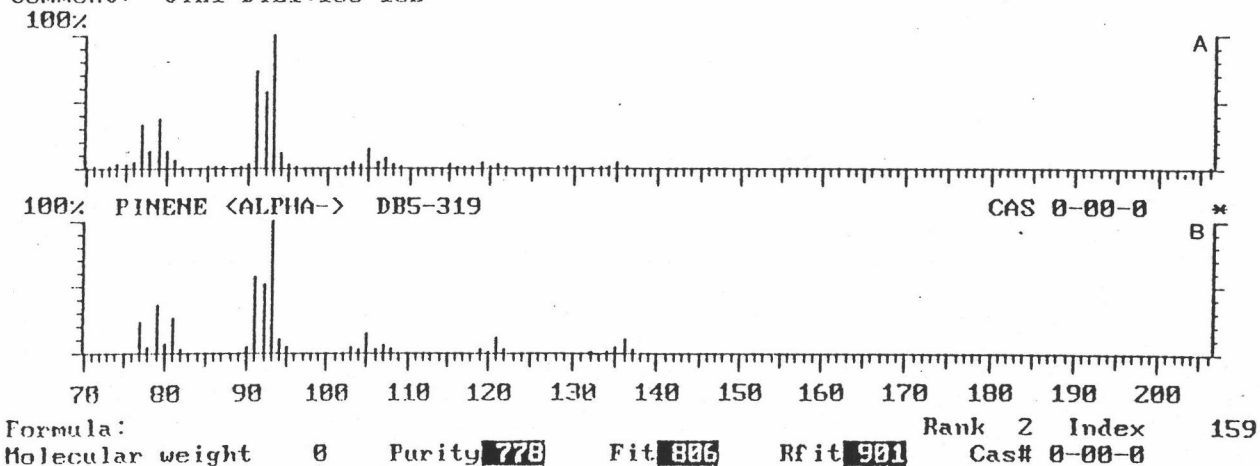


Figure 27 Mass spectrum of α -pinene in pepper oil (A) compared with mass spectrum of authentic α -pinene (B) by GC-MS.

Library Search C:\SATURN\THAI4 Acquired: Jul-22-1992 Scan number 478
 Comment: OIL1 DIL 1:100 1 UL

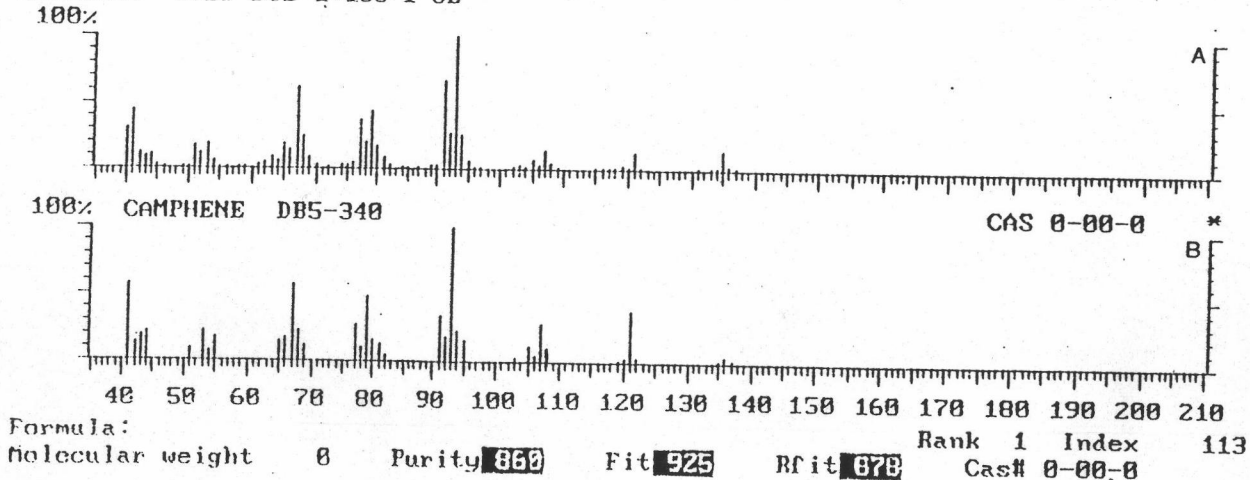


Figure 28 Mass spectrum of camphene in pepper oil (A) compared with mass spectrum of authentic camphene (B) by GC-MS.

Library Search C:\SATURN\THA14 Acquired: Jul-22-1992 Scan number 385
 Comment: OIL1 DIL1:100 1UL

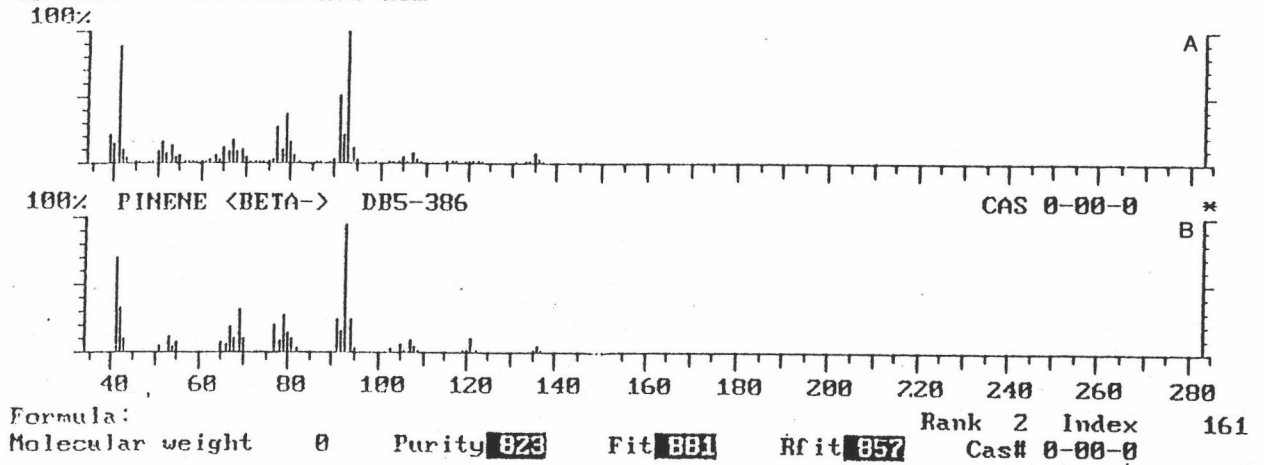


Figure 29 Mass spectrum of β -pinene in pepper oil (A) compared with mass spectrum of authentic β -pinene (B) by GC-MS.

Library Search C:\SATURN\THA14 Acquired: Jul-22-1992 Scan number 375
 Comment: OIL1 DIL1:100 1UL

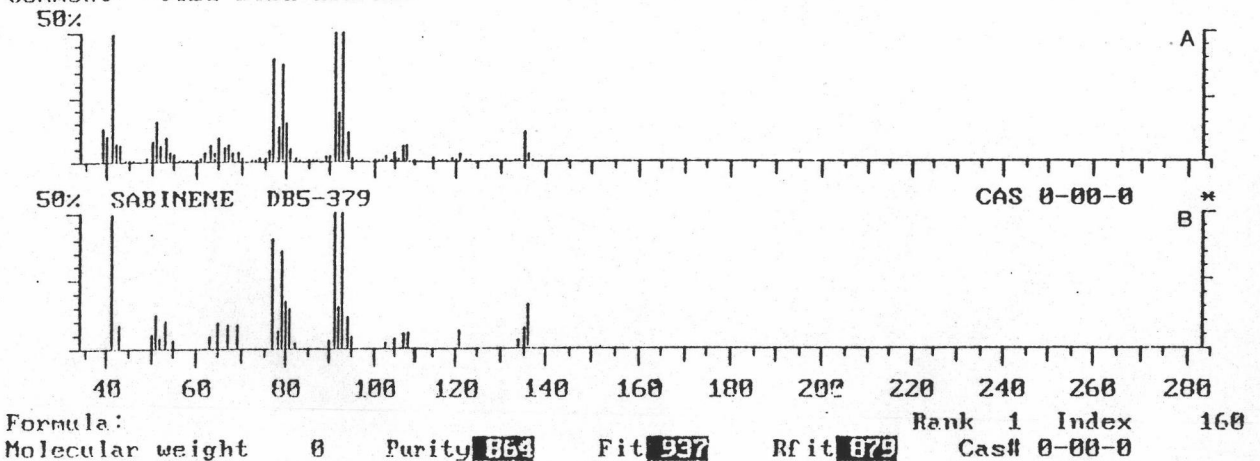


Figure 30 Mass spectrum of sabinene in pepper oil (A) compared with mass spectrum of authentic sabinene (B) by GC-MS.

Library Search C:\SATURN\THA14 Acquired: Jul-22-1992 Scan number 441
 Comment: OIL1 DIL1:100 1UL

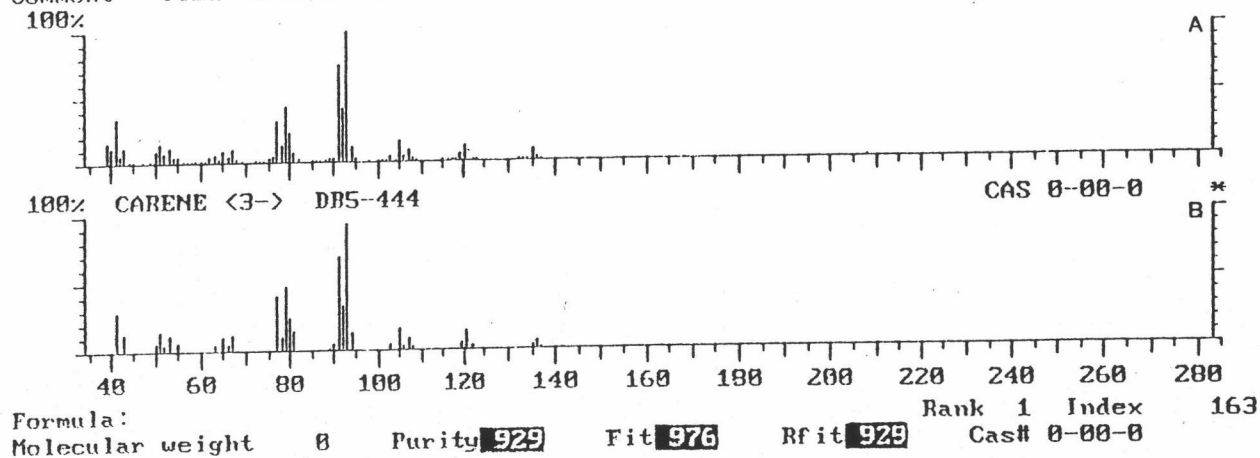


Figure 31 Mass spectrum of Δ^3 -carene in pepper oil (A) compared with mass spectrum of authentic Δ^3 -carene (B) by GC-MS.

Library Search C:\SATURN\THA14 Acquired: Jul-22-1992 Scan number 402
 Comment: OIL1 DIL1:100 1UL

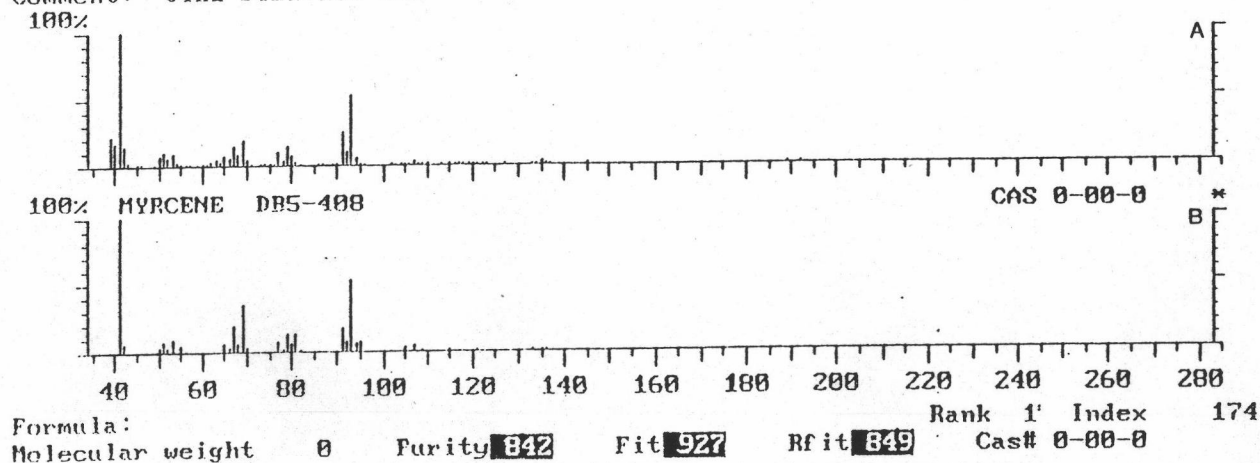


Figure 32 Mass spectrum of myrcene in pepper oil (A) compared with mass spectrum of authentic myrcene (B) by GC-MS.

Library Search C:\SATURN\THAI4 Acquired: Jul-22-1992 Scan number 429
 Comment: OIL1 DIL1:100 1UL

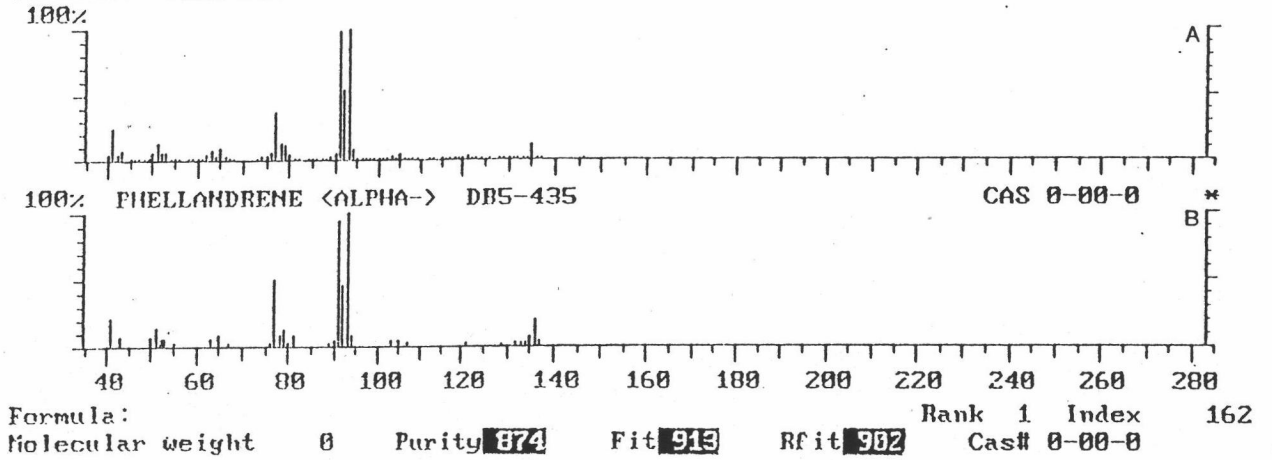


Figure 33 Mass spectrum of α -phellandrene in pepper oil (A) compared with mass spectrum of authentic α -phellandrene (B) by GC-MS.

Library Search C:\SATURN\THAI4 Acquired: Jul-22-1992 Scan number 480
 Comment: OIL1 DIL1:100 1UL

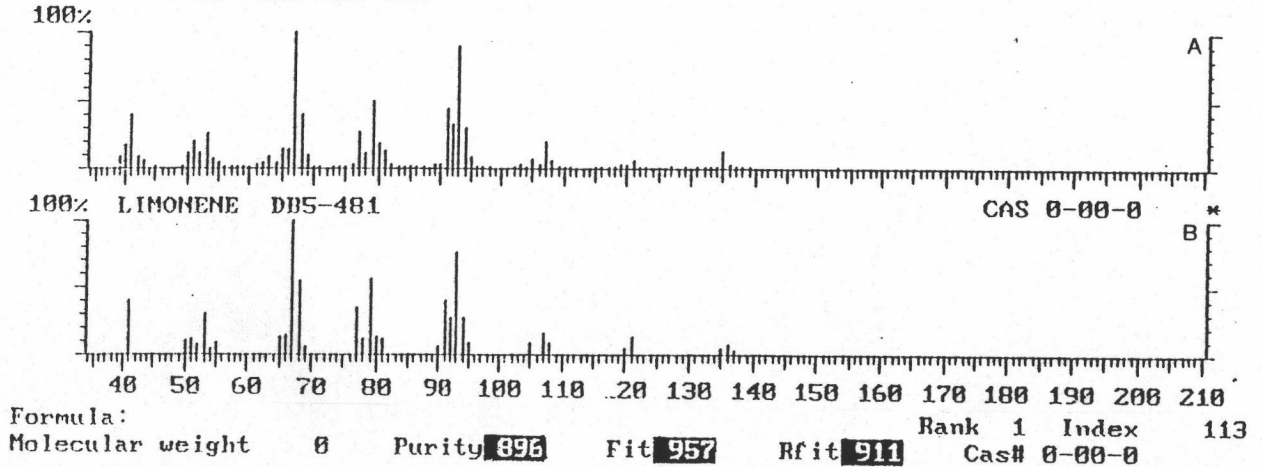


Figure 34 Mass spectrum of limonene in pepper oil (A) compared with mass spectrum of authentic limonene (B) by GC-MS.

Library Search C:\SATURN\THA14 Acquired: Jul-22-1992 Scan number 468
 Comment: OIL1 DIL1:100 1UL

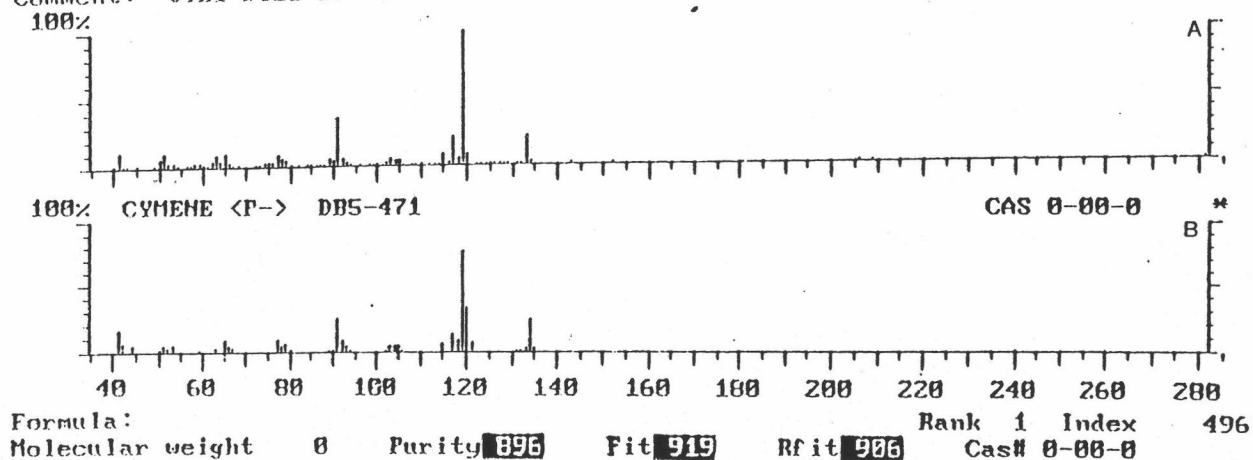


Figure 35 Mass spectrum of *p*-cymene in pepper oil (A) compared with mass spectrum of authentic *p*-cymene (B) by GC-MS.

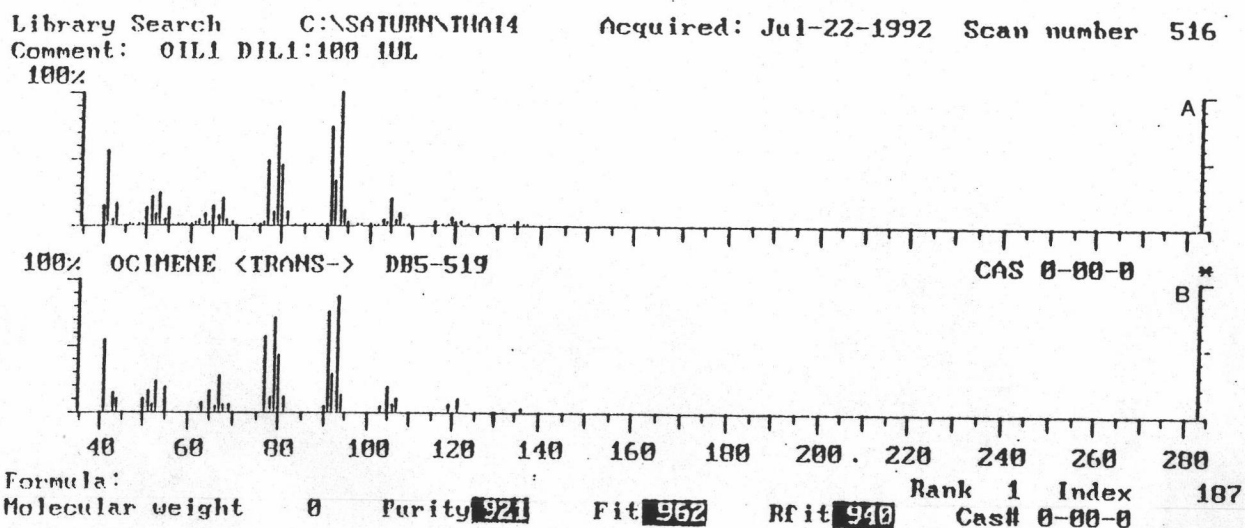


Figure 36 Mass spectrum of *trans*-ocimene in pepper oil (A) compared with mass spectrum of authentic *trans*-ocimene (B) by GC-MS.

Library Search C:\SATURN\THAI4 Acquired: Jul-22-1992 Scan number 539
 Comment: OIL1 DIL1:100 1UL

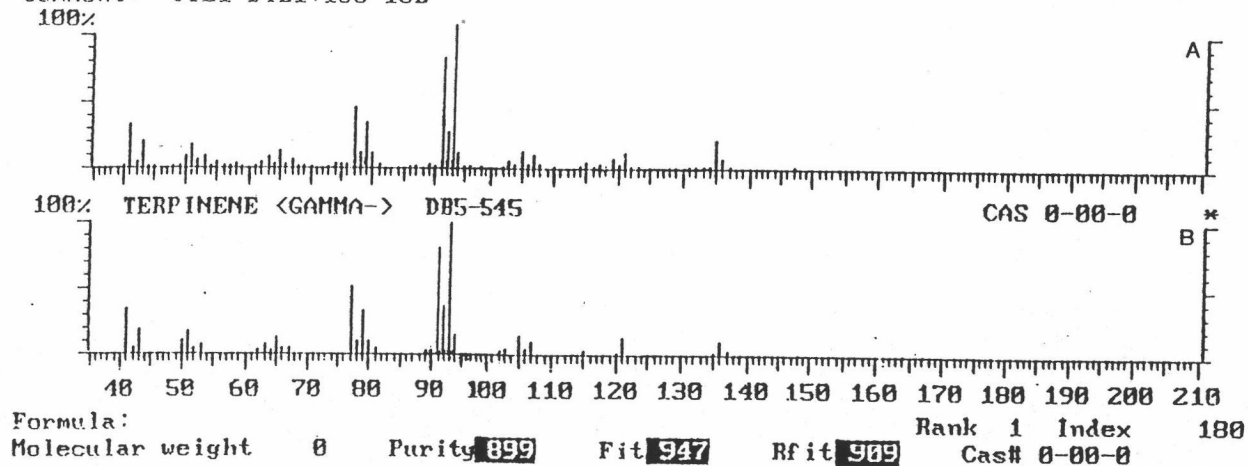


Figure 37 Mass spectrum of γ -terpinene in pepper oil (A) compared with mass spectrum of authentic γ -terpinene (B) by GC-MS.

Library Search C:\SATURN\THAI4 Acquired: Jul-22-1992 Scan number 539
 Comment: OIL1 DIL1:100 1UL

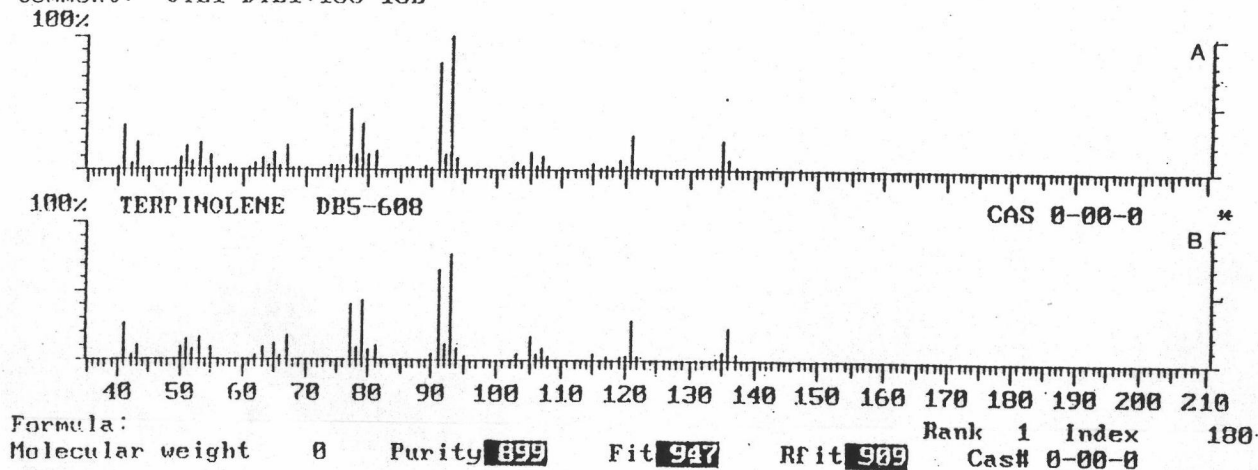


Figure 38 Mass spectrum of terpinolene in pepper oil (A) compared with mass spectrum of authentic terpinolene (B) by GC-MS.

Library Search C:\SATURN\THAI4 Acquired: Jul-22-1992 Scan number 630
 Comment: OIL1 DIL1:100 1UL

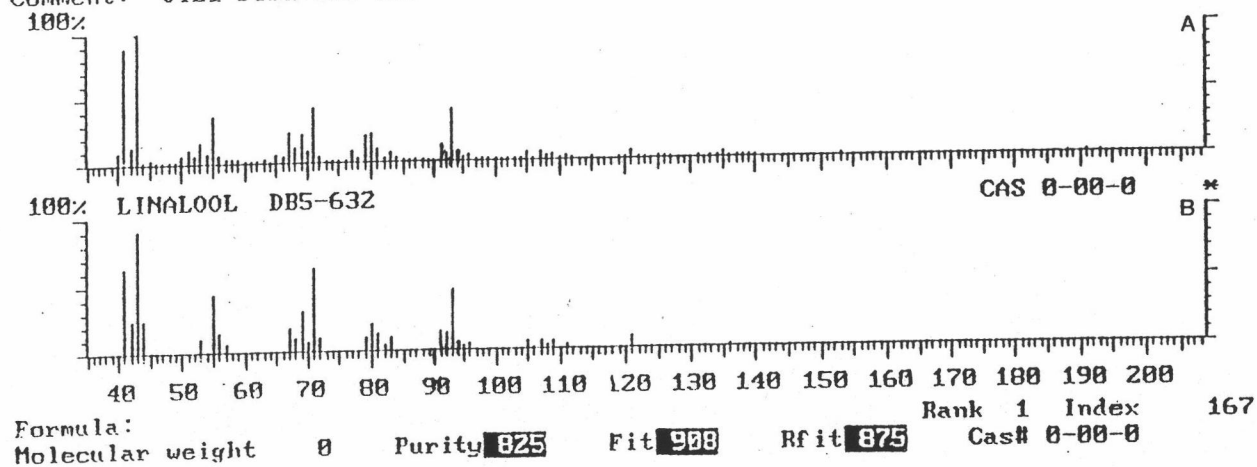


Figure 39 Mass spectrum of linalool in pepper oil (A) compared with mass spectrum of authentic linalool (B) by GC-MS.

Library Search C:\SATURN\THAI4 Acquired: Jul-22-1992 Scan number 1268
 Comment: OIL1 DIL1:100 1UL

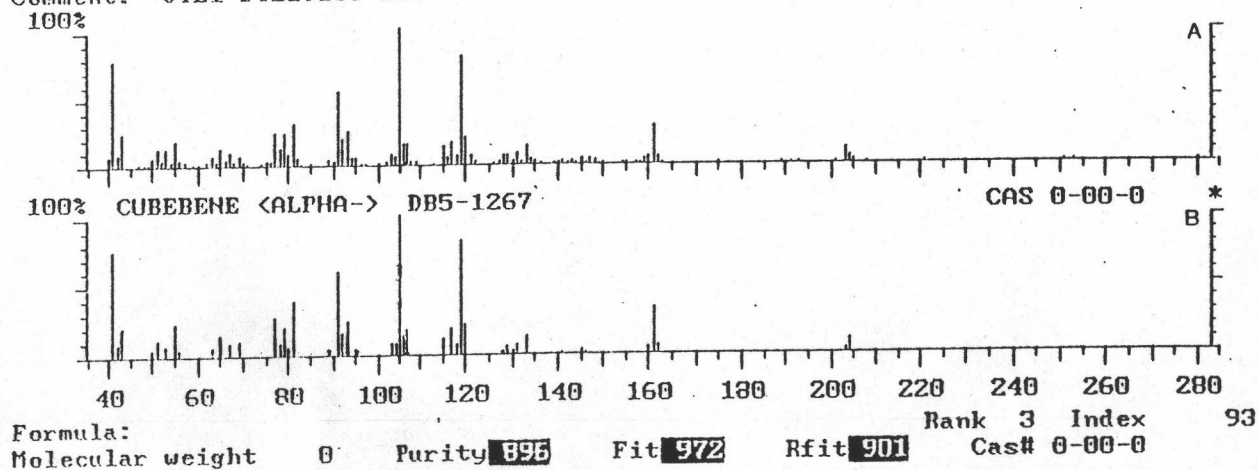


Figure 40 Mass spectrum of α -cubebene in pepper oil (A) compared with mass spectrum of authentic α -cubebene (B) by GC-MS.

Library Search C:\SATURN\THA14 Acquired: Jul-22-1992 Scan number 1238
 Comment: OIL1 DIL1:100 IUL

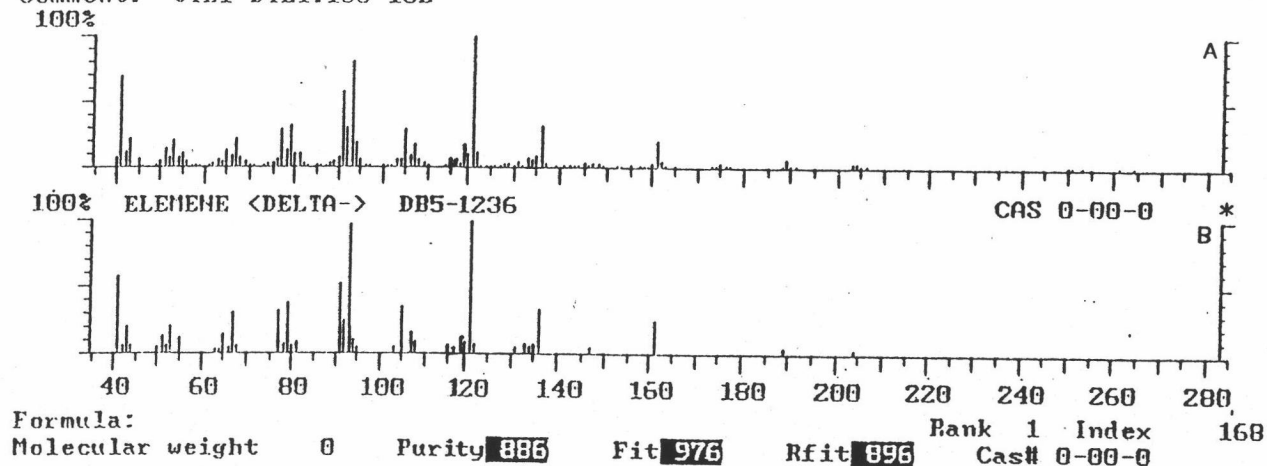


Figure 41 Mass spectrum of δ -elemene in pepper oil (A) compared with mass spectrum of authentic δ -elemene (B) by GC-MS.

Library Search C:\SATURN\THA14 Acquired: Jul-22-1992 Scan number 1336
 Comment: OIL1 DIL1:100 IUL

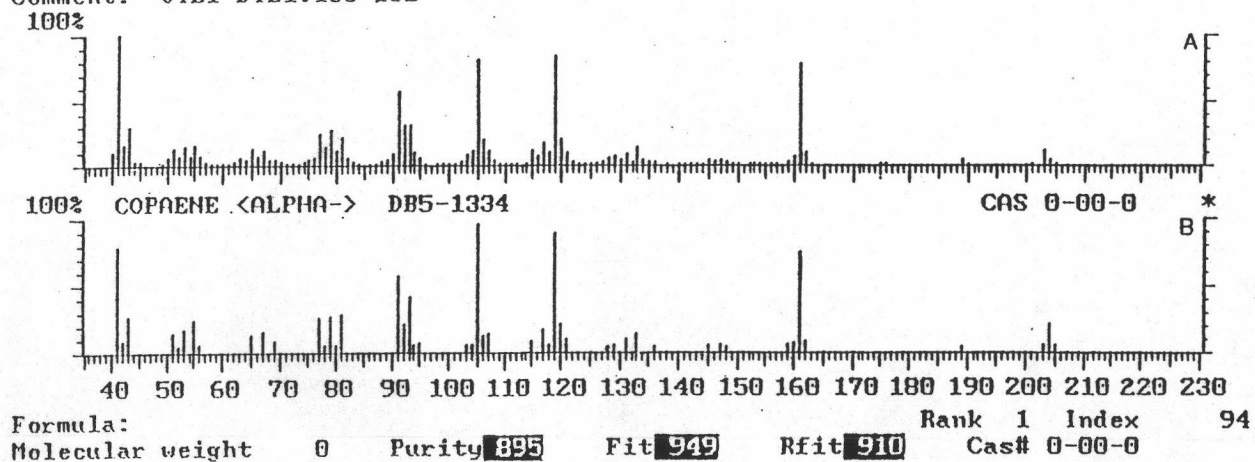


Figure 42 Mass spectrum of α -copaene in pepper oil (A) compared with mass spectrum of authentic α -copaene (B) by GC-MS.

Library Search C:\SATURN\THA14 Acquired: Jul-22-1992 Scan number 1371
 Comment: OIL1 DIL1:100 1UL

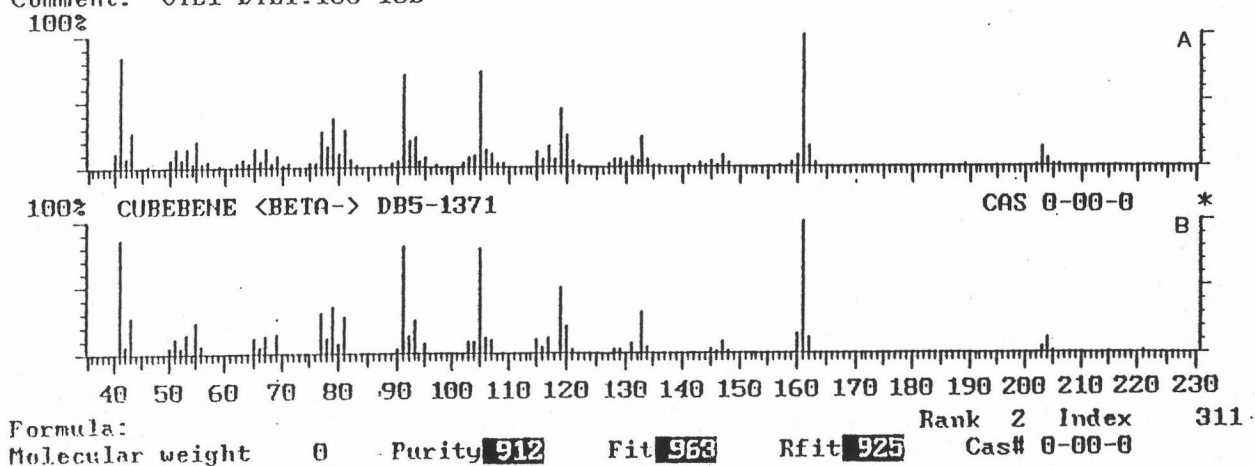


Figure 43 Mass spectrum of β -cubebene in pepper oil (A) compared with mass spectrum of authentic β -cubebene (B) by GC-MS.

Library Search C:\SATURN\THA14 Acquired: Jul-22-1992 Scan number 1423
 Comment: OIL1 DIL1:100 1UL

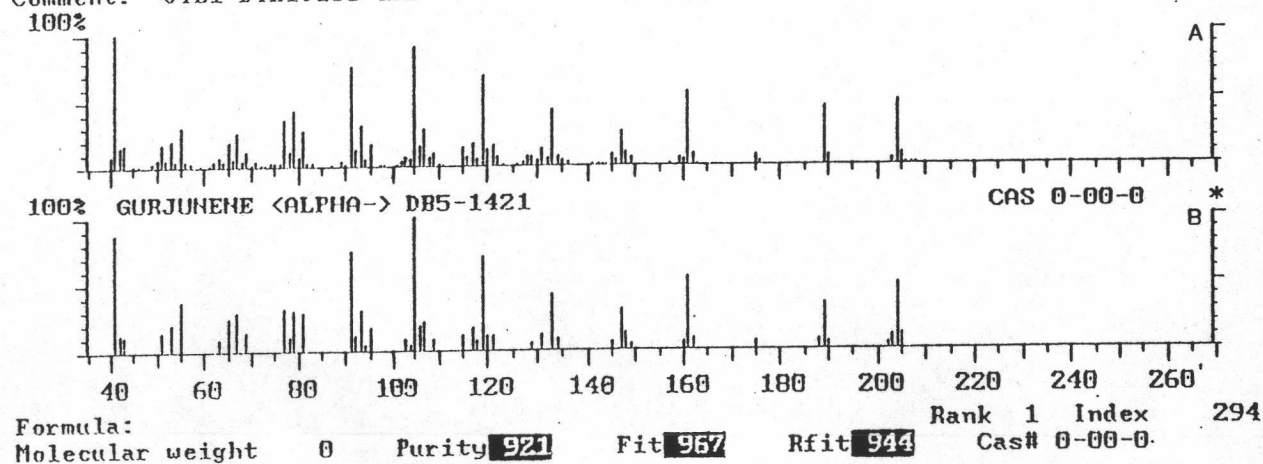


Figure 44 Mass spectrum of α -gurjunene in pepper oil (A) compared with mass spectrum of authentic α -gurjunene (B) by GC-MS.

Library Search C:\SATURN\THA14 Acquired: Jul-22-1992 Scan number 1443
 Comment: OIL1 DIL1:100 1UL

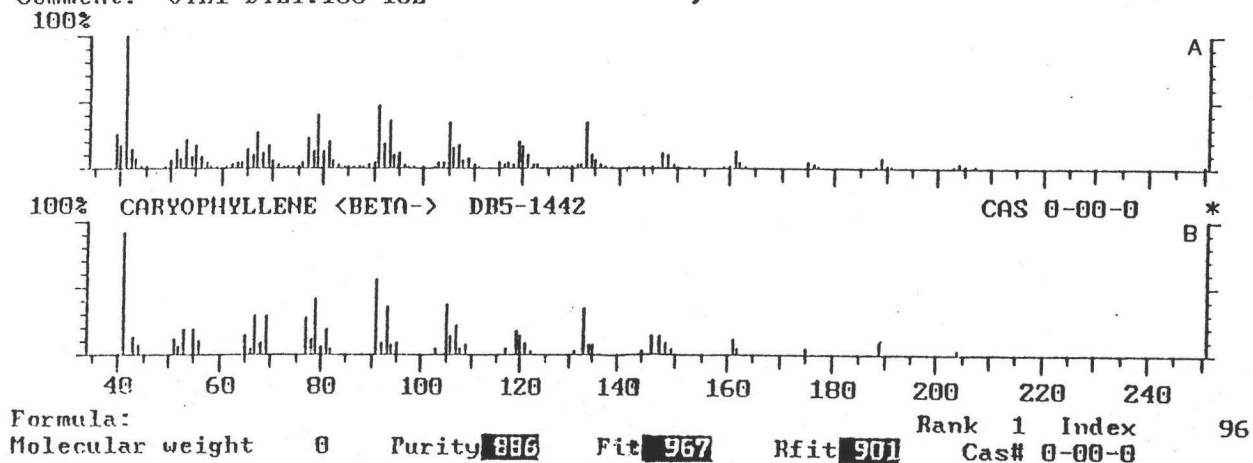


Figure 45 Mass spectrum of β -caryophyllene in pepper oil (A) compared with mass spectrum of authentic β -caryophyllene (B) by GC-MS.

Library Search C:\SATURN\THA14 Acquired: Jul-22-1992 Scan number 1531
 Comment: OIL1 DIL1:100 1UL

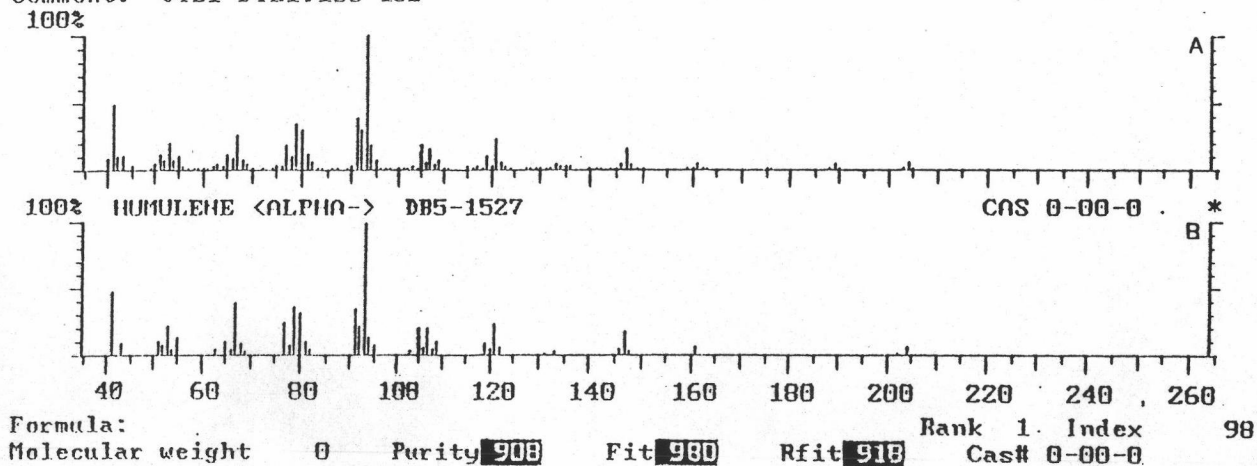


Figure 46 Mass spectrum of α -humulene in pepper oil (A) compared with mass spectrum of authentic α -humulene (B) by GC-MS.

Library Search C:\SATURN\THAI4 Acquired: Jul-22-1992 Scan number 1599
 Comment: OIL1 DIL1:100 1UL

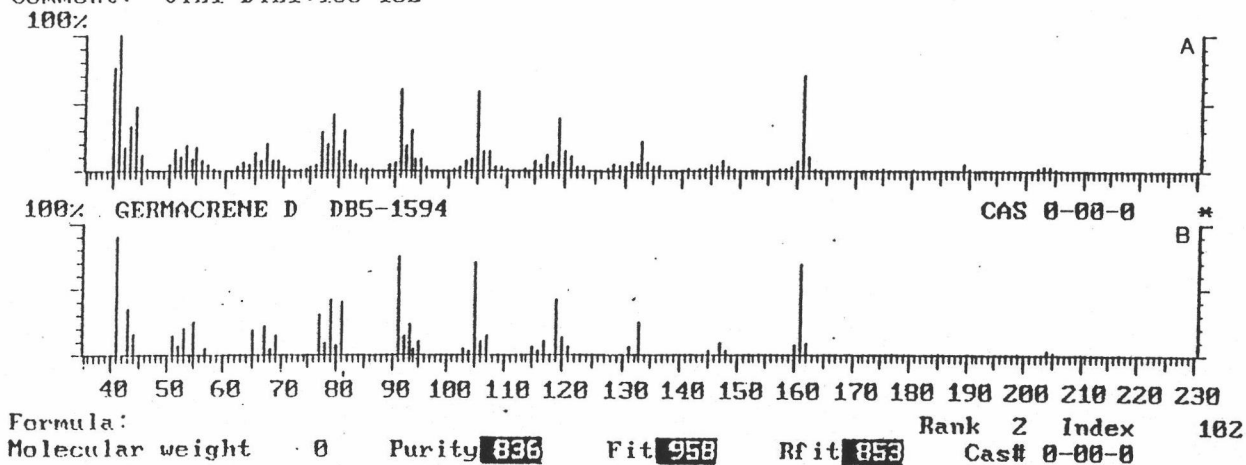


Figure 47 Mass spectrum of germacrene D in pepper oil (A) compared with mass spectrum of authentic germacrene D (B) by GC-MS.

Library Search C:\SATURN\THAI4 Acquired: Jul-22-1992 Scan number 1649
 Comment: OIL1 DIL1:100 1UL

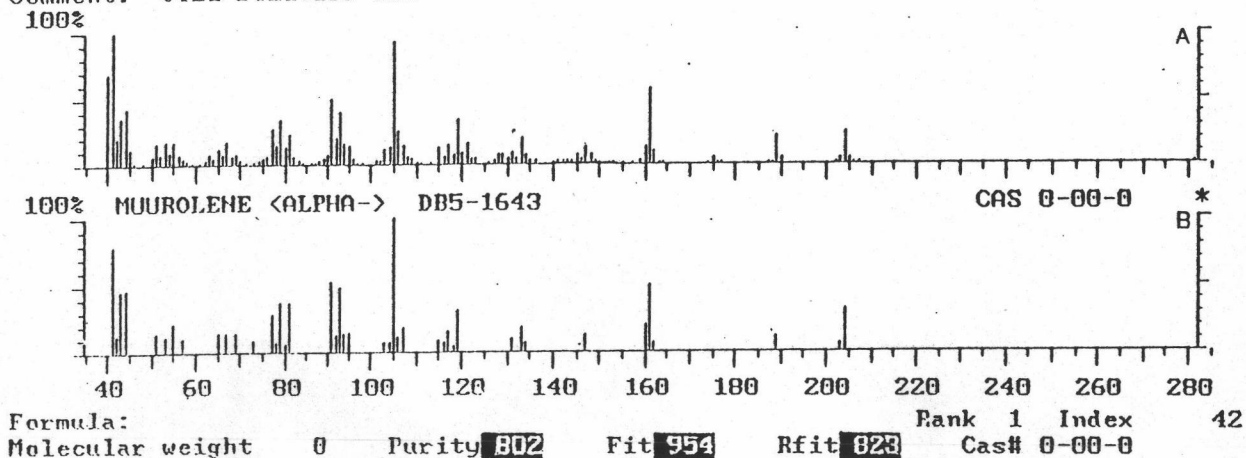


Figure 48 Mass spectrum of α -muurolene in pepper oil (A) compared with mass spectrum of authentic α -muurolene (B) by GC-MS.

Library Search C:\SATURN\THA14 Acquired: Jul-22-1992 Scan number 1680
 Comment: OIL1 DIL1:100 1UL

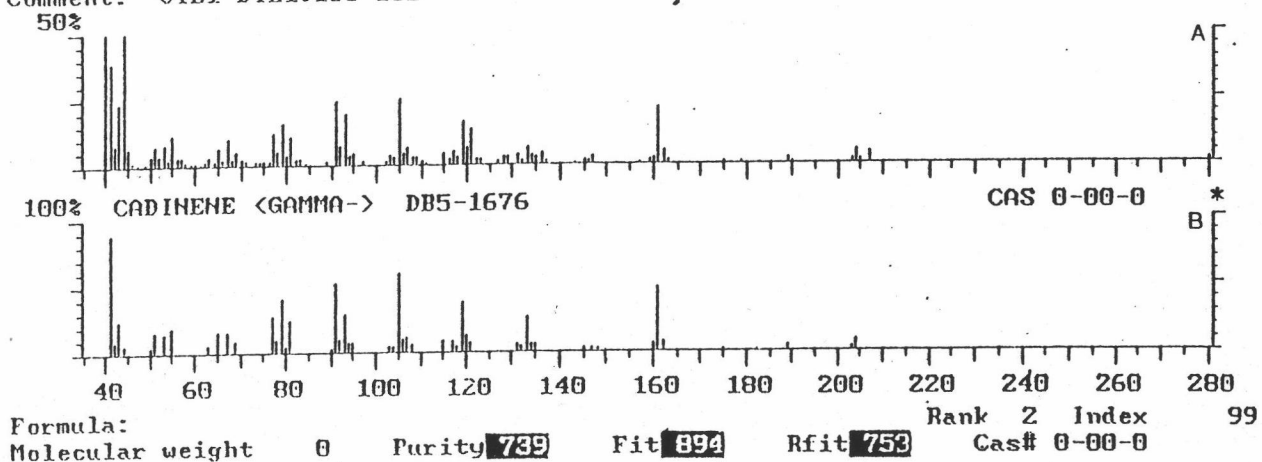


Figure 49 Mass spectrum of γ -cadinene in pepper oil (A) compared with mass spectrum of authentic γ -cadinene (B) by GC-MS.

Library Search C:\SATURN\THA14 Acquired: Jul-22-1992 Scan number 1638
 Comment: OIL1 DIL1:100 1UL

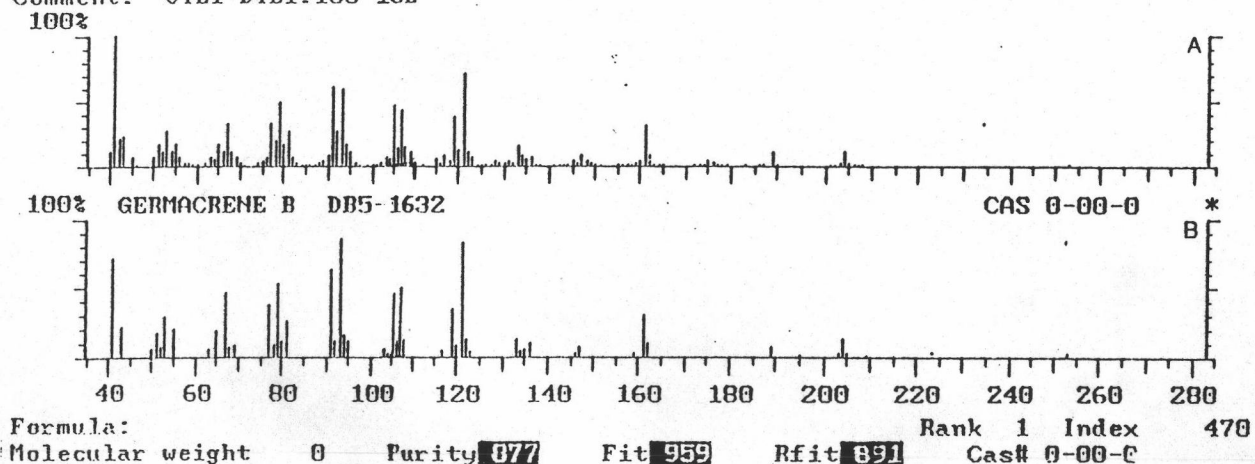


Figure 50 Mass spectrum of germacrene B in pepper oil (A) compared with mass spectrum of authentic germacrene B (B) by GC-MS.

Library Search C:\SATURN\THA14 Acquired: Jul-22-1992 Scan number 1709
 Comment: OIL1 DIL1:100 IUL

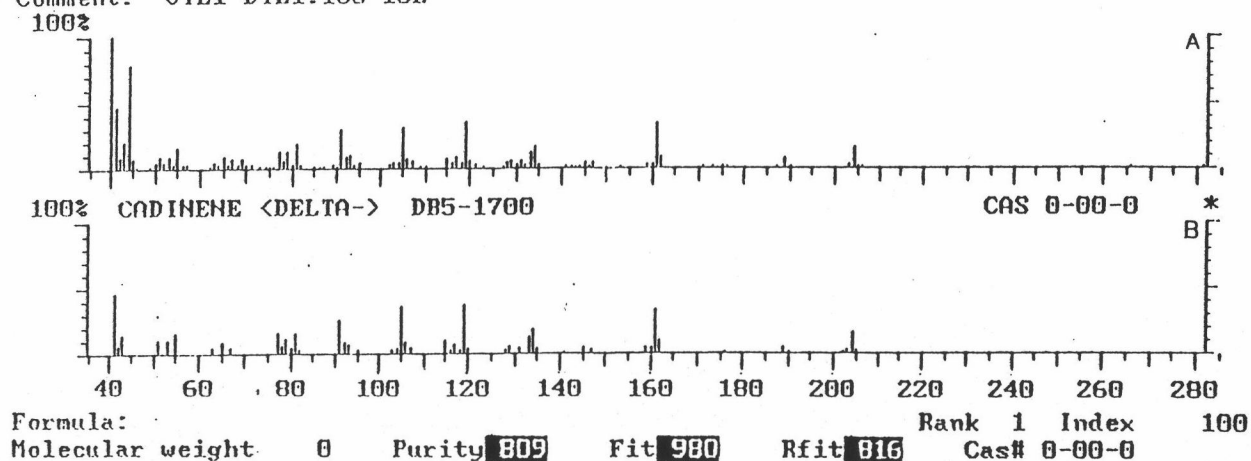


Figure 51 Mass spectrum of δ -cadinene in pepper oil (A) compared with mass spectrum of authentic δ -cadinene (B) by GC-MS.

Library Search C:\SATURN\THA14 Acquired: Jul-22-1992 Scan number 1801
 Comment: OIL1 DIL1:100 IUL

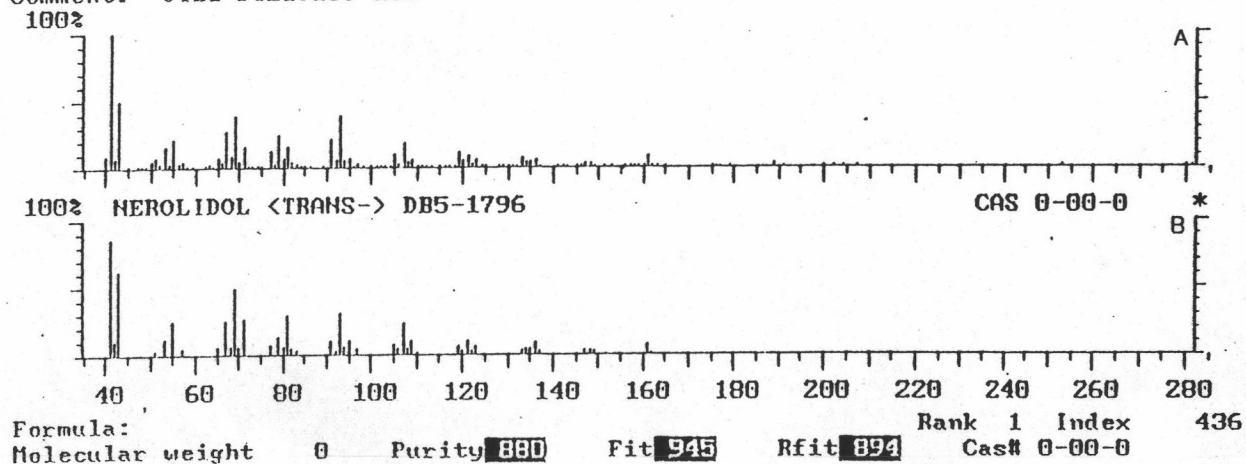


Figure 52 Mass spectrum of *trans*-nerolidol in pepper oil (A) compared with mass spectrum of authentic *trans*-nerolidol (B) by GC-MS.

Library Search C:\SATURN\THAI1 Acquired: Jul-22-1992 Scan number 1844
 Comment: OIL1 DIL1:100 1UL

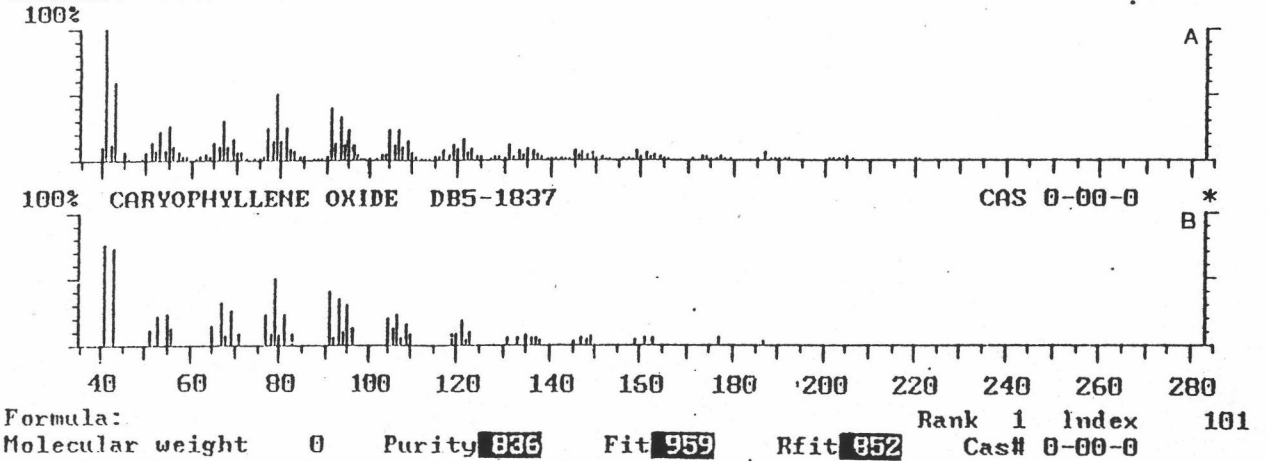


Figure 53 Mass spectrum of caryophyllene oxide in pepper oil (A) compared with mass spectrum of authentic caryophyllene oxide (B) by GC-MS.

Library Search C:\SATURN\THAI4 Acquired: Jul-22-1992 Scan number 1830
 Comment: OIL1 DIL1:100 1UL

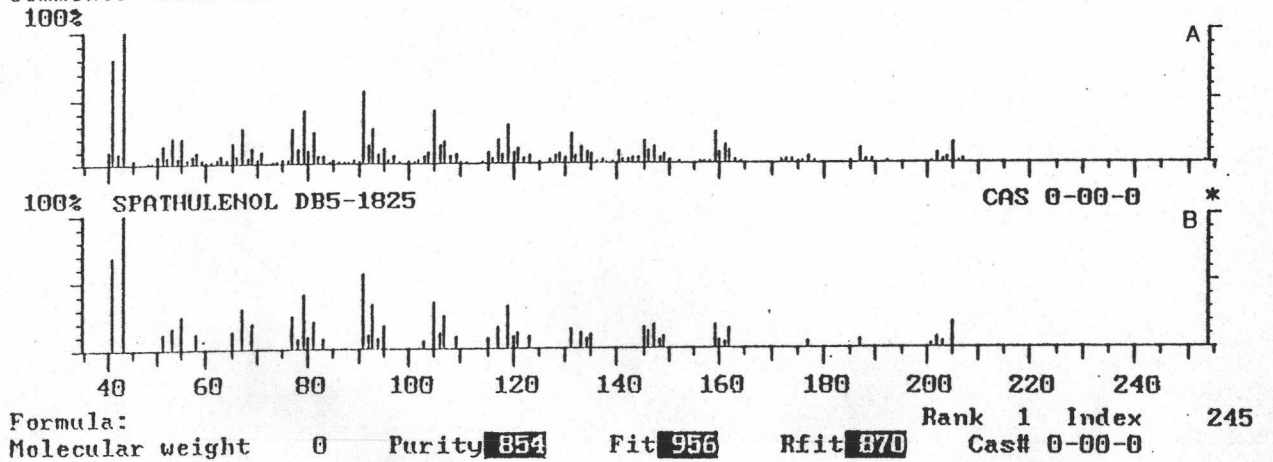


Figure 54 Mass spectrum of spathulenol in pepper oil (A) compared with mass spectrum of authentic spathulenol (B) by GC-MS.

Library Search C:\SATURN\THA14 Acquired: Jul-22-1992 Scan number 1983
 Comment: OIL1 DIL1:100 IUL

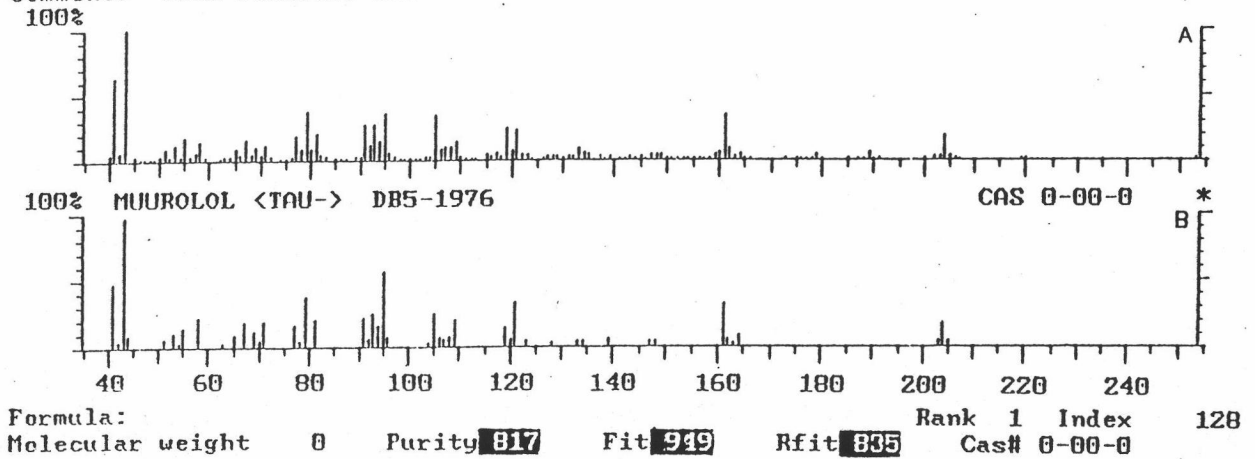


Figure 55 Mass spectrum of *tau*-muurolol in pepper oil (A) compared with mass spectrum of authentic *tau*-muurolol (B) by GC-MS.

Library Search C:\SATURN\THA14 Acquired: Jul-22-1992 Scan number 1993
 Comment: OIL1 DIL1:100 IUL

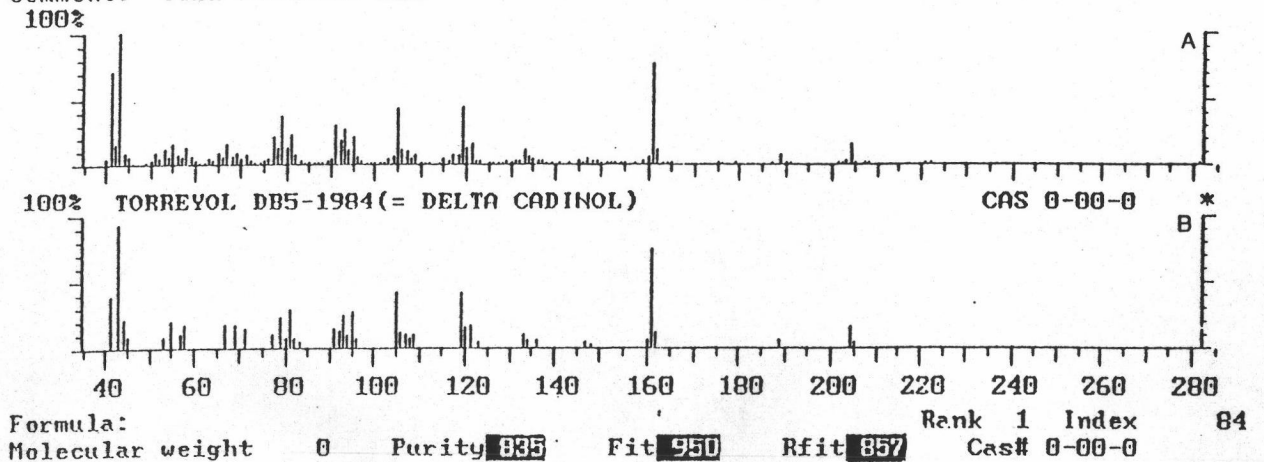


Figure 56 Mass spectrum of torreyol in pepper oil (A) compared with mass spectrum of authentic torreyol (B) by GC-MS.

VITA

Miss Waraporn Putalun was born on April 10, 1969 in Loei, Thailand. She received her Bachelor of Science in Pharmacy (second class honors) in 1990 from Khon Kaen University, Khon Kaen, Thailand.