

Effects of Hydrothermal Processing on Fatty Acids and Volatile Profile of Cowpeas (*Vigna unguiculata*), Chickpeas (*Cicer arietinum*) and Kidney Beans (*Phaseolus vulgaris*): A Fingerprinting Approach

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Table S1. Commercial standards for fatty acid methyl ester analysis

Analyte	CAS Number	Target Concentration
Butyric acid methyl ester	623-42-7	400 µg/mL
Caproic acid methyl ester	106-70-7	400 µg/mL
Caprylic acid methyl ester	111-11-5	400 µg/mL
Capric acid methyl ester	110-42-9	400 µg/mL
Undecanoic acid methyl ester	1731-86-8	200 µg/mL
Lauric acid methyl ester	111-82-0	400 µg/mL
Tridecanoic acid methyl ester	1731-88-0	200 µg/mL
Myristic acid methyl ester	124-10-7	400 µg/mL
Myristoleic acid methyl ester	56219-06-8	200 µg/mL
Pentadecanoic acid methyl ester	7132-64-1	200 µg/mL
cis-10-Pentadecenoic acid methyl ester	90176-52-6	200 µg/mL
Palmitic acid methyl ester	112-39-0	600 µg/mL
Palmitoleic acid methyl ester	1120-25-8	200 µg/mL
Heptadecanoic acid methyl ester	1731-92-6	200 µg/mL
cis-10-Heptadecenoic acid methyl ester	75190-82-8	200 µg/mL
Stearic acid methyl ester	112-61-8	400 µg/mL
Elaidic acid methyl ester	1937-62-8	200 µg/mL
Oleic acid methyl ester	112-62-9	400 µg/mL
Linolelaidic acid methyl ester	2566-97-4	200 µg/mL
Linoleic acid methyl ester	112-63-0	200 µg/mL
Arachidic acid methyl ester	1120-28-1	400 µg/mL
g-Linolenic acid methyl ester	16326-32-2	200 µg/mL
cis-11-Eicosenoic acid methyl ester	2/09/2390	200 µg/mL
Linolenic acid methyl ester	301-00-8	200 µg/mL
Heneicosanoic acid methyl ester	6064-90-0	200 µg/mL
cis-11,14-Eicosadienoic acid methyl ester	7/02/2463	200 µg/mL
Behenic acid methyl ester	929-77-1	400 µg/mL
Methyl cis-8,11,14-eicosatrienoate	21061-10-9	200 µg/mL
Erucic acid methyl ester	1120-34-9	200 µg/mL
cis-11-14-17-Eicosatrienoic acid methyl ester	55682-88-7	200 µg/mL
Arachidonic acid methyl ester	2566-89-4	200 µg/mL
Tricosanoic acid methyl ester	2433-97-8	200 µg/mL

Analyte	CAS Number	Target Concentration
cis-13,16-Docosadienoic acid methyl ester	61012-47-3	200 µg/mL
Lignoceric acid methyl ester	2442-49-1	400 µg/mL
cis-5,8,11,14,17-Eicosapentaenoic acid methyl ester	2734-47-6	200 µg/mL
Nervonic acid methyl ester	2733-88-2	200 µg/mL
cis-4,7,10,13,16,19-Docosahexaenoic acid methyl ester	301-01-9	200 µg/mL

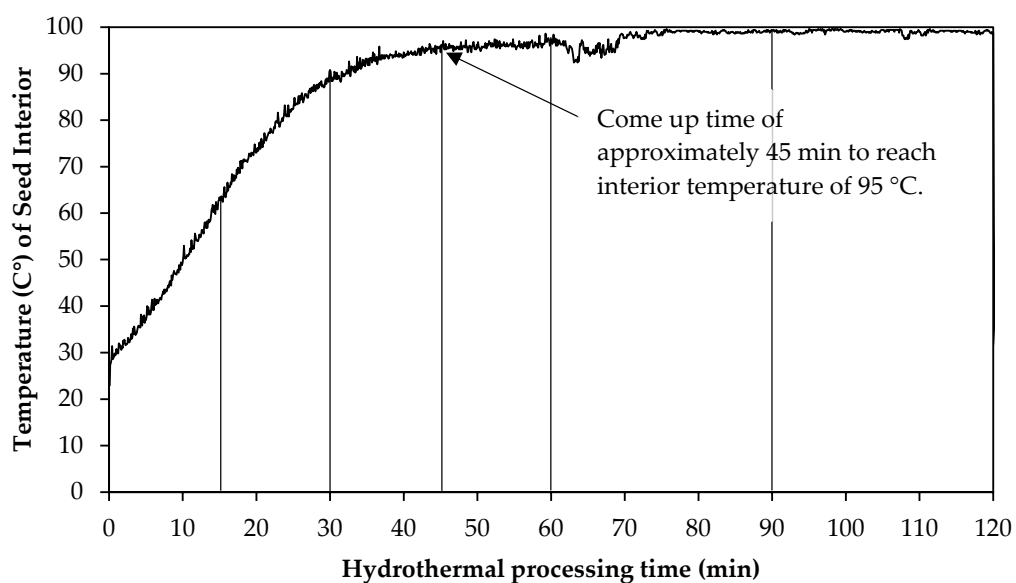
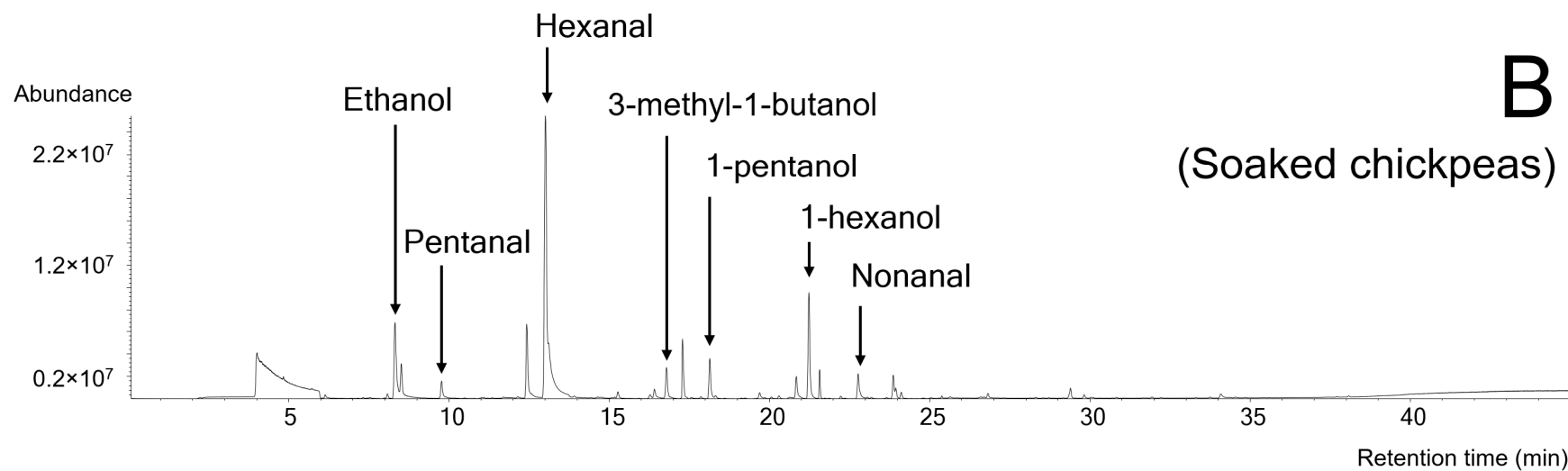
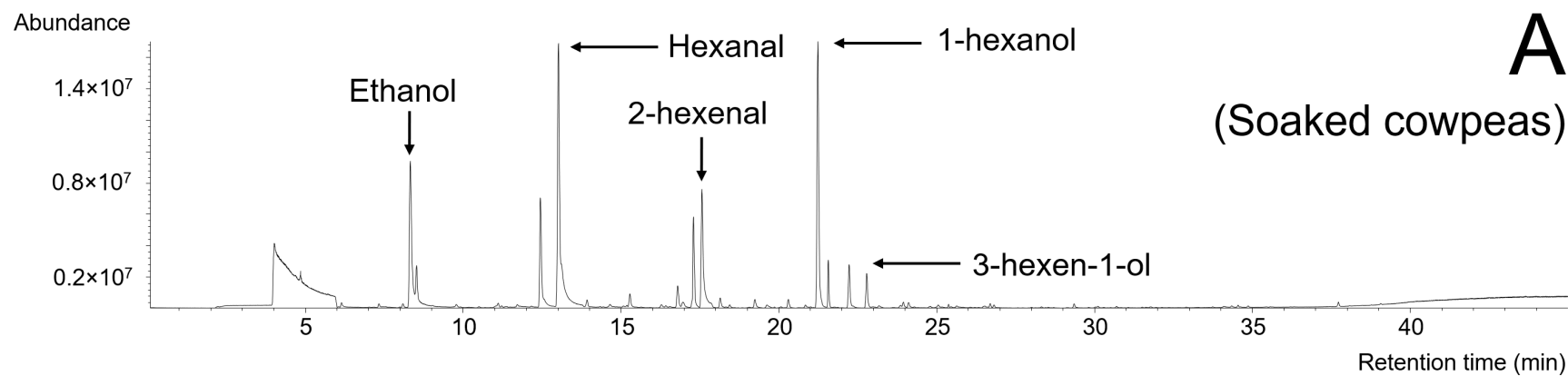
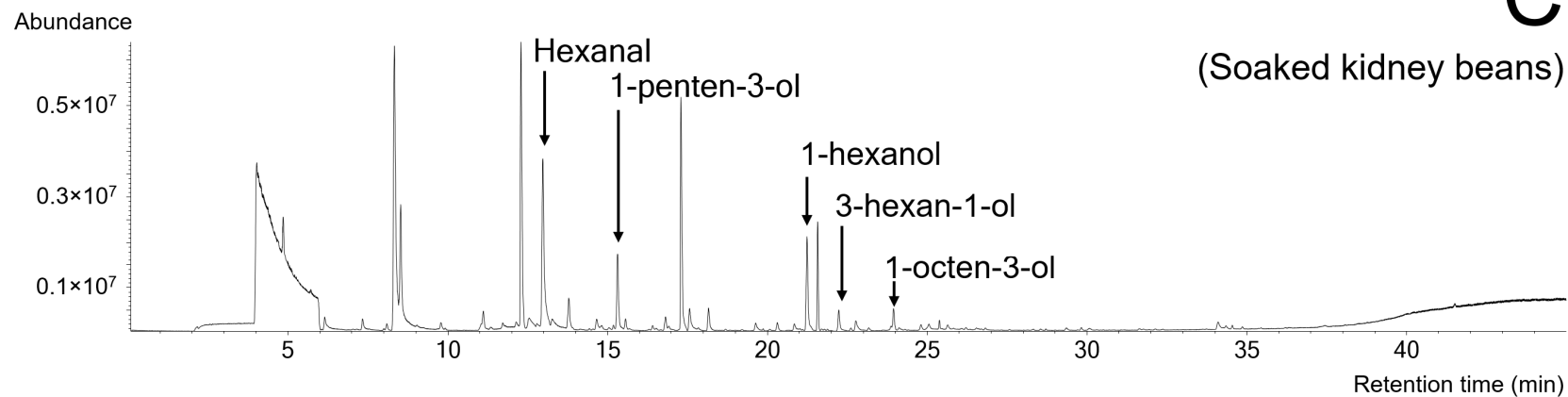


Figure S1. Time-temperature profile of seed interior during hydrothermal processing.

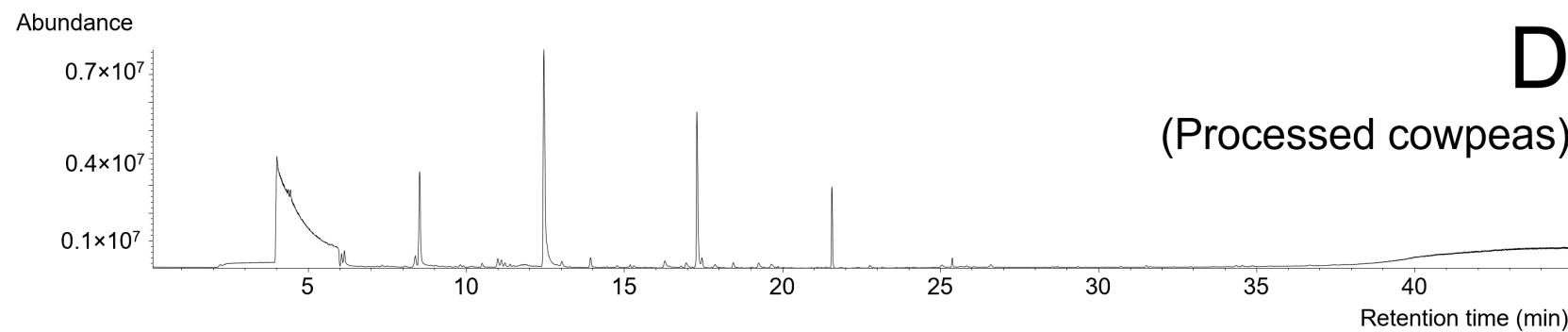


C

(Soaked kidney beans)

**D**

(Processed cowpeas)



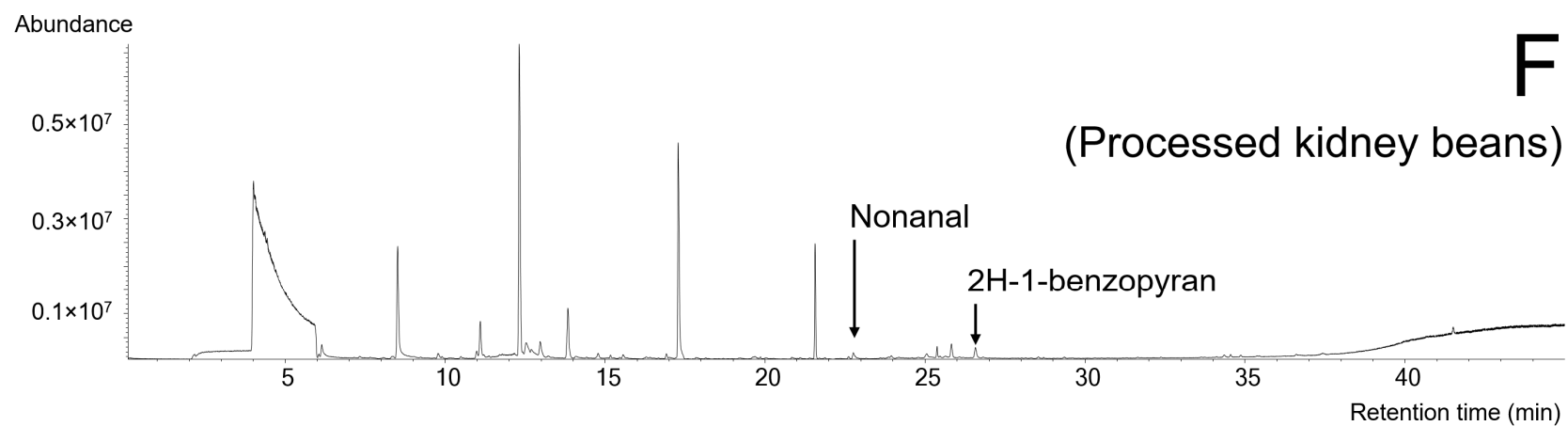
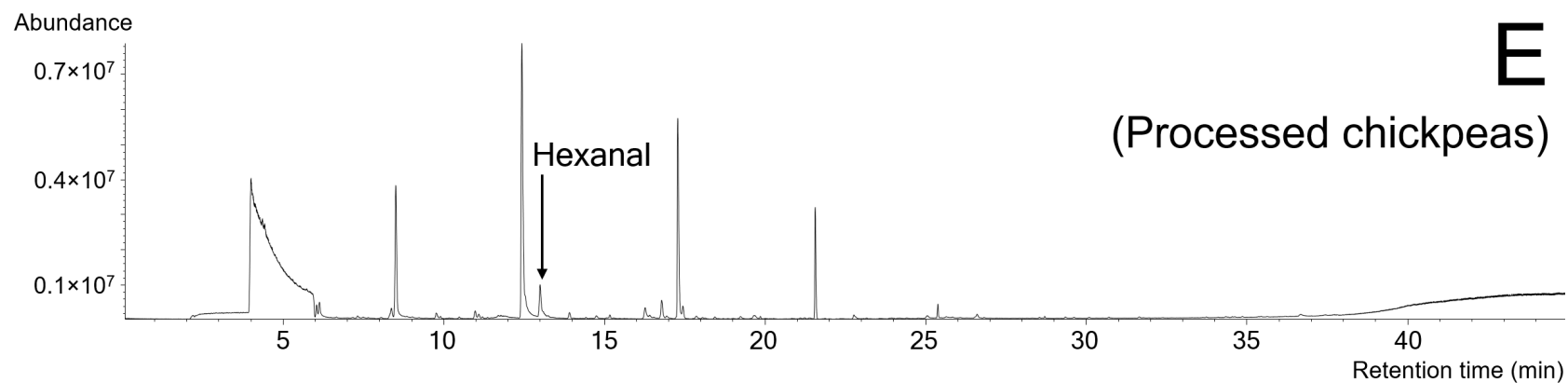
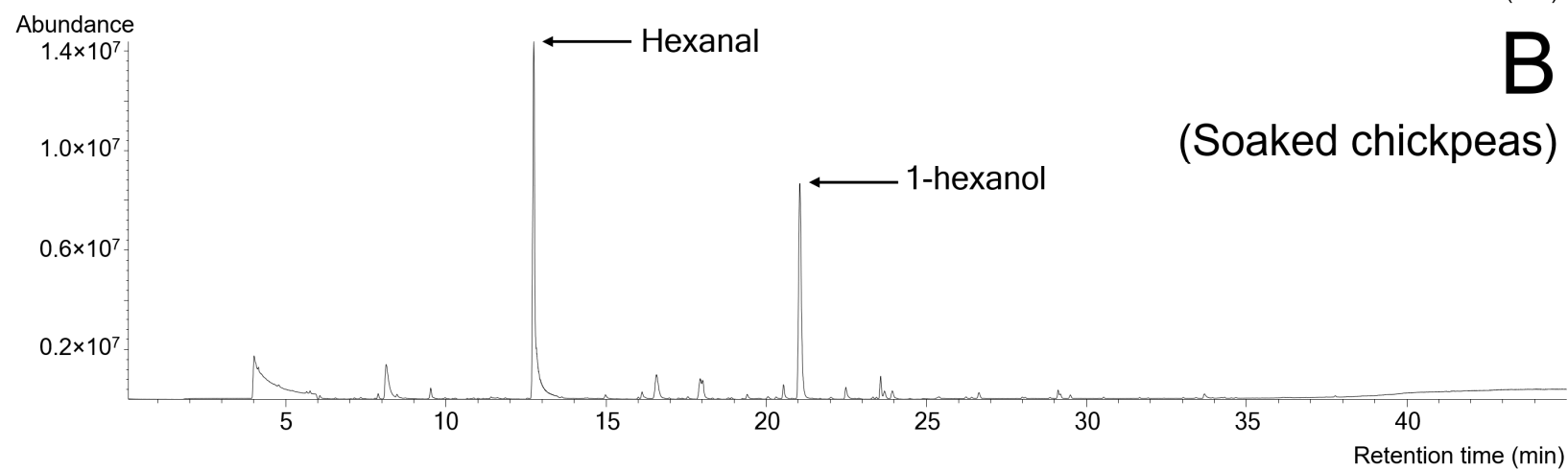
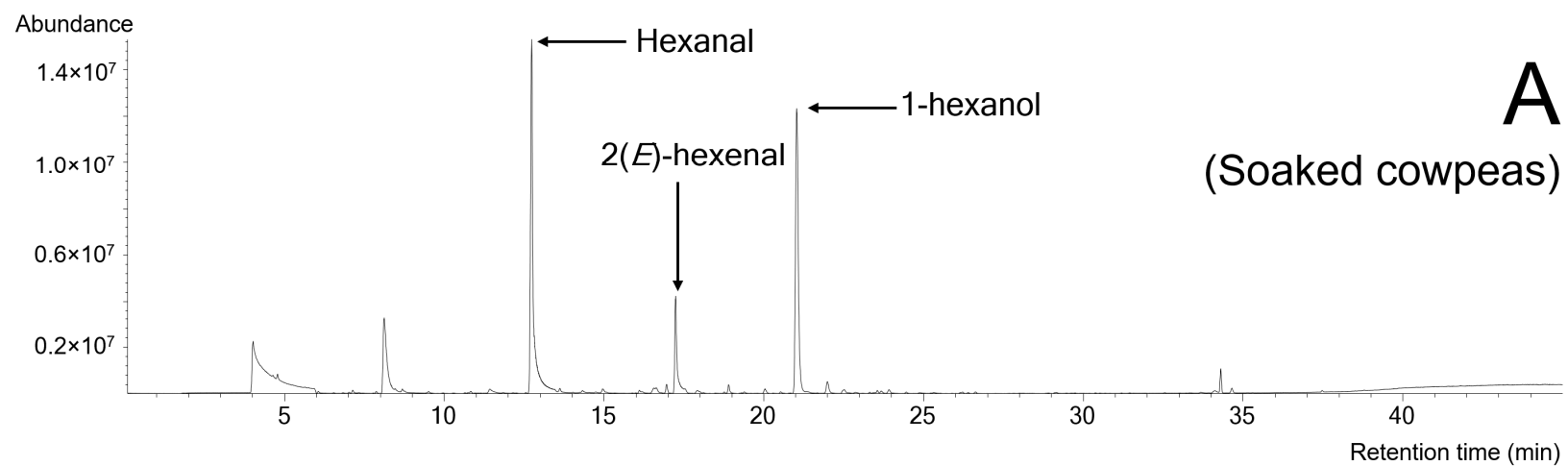
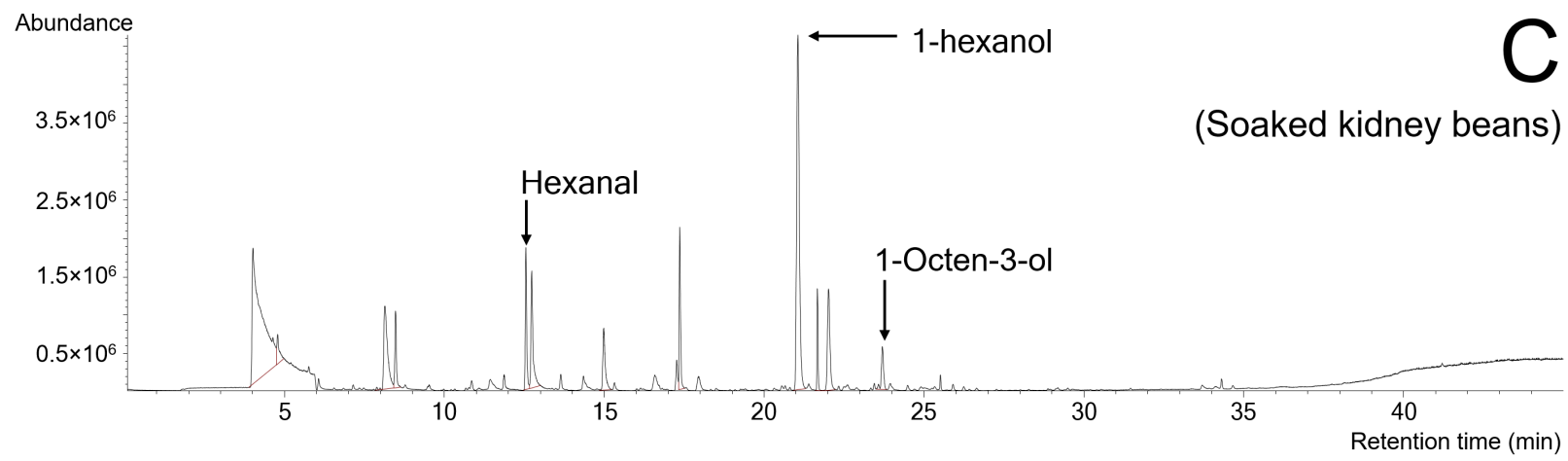


Figure S2. Representative total ion chromatograms of cowpeas, chickpeas and kidney beans in the opened system approach. A=soaked cowpeas; B=soaked chickpeas; C=soaked kidney beans; D=processed cowpeas; E=processed chickpeas; F=processed kidney beans.



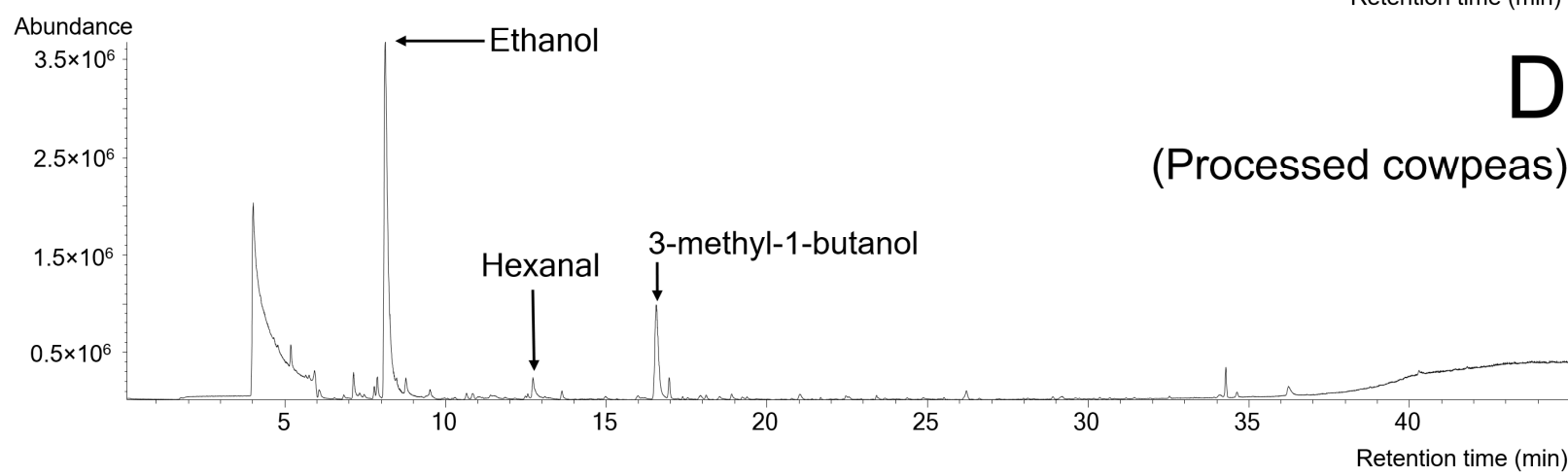
C

(Soaked kidney beans)



D

(Processed cowpeas)



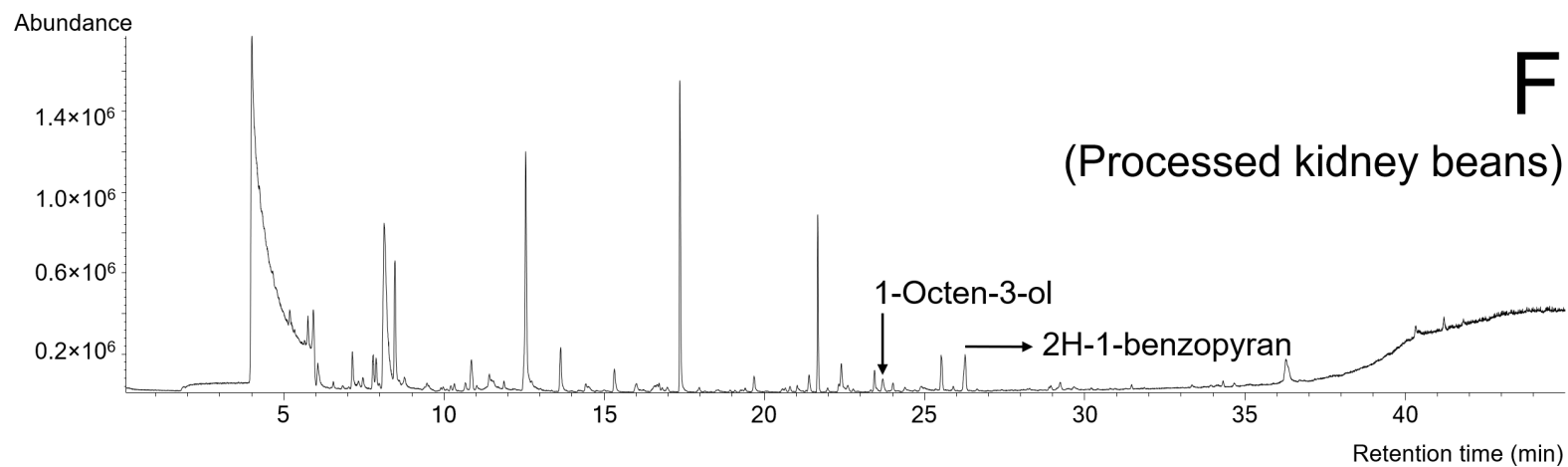
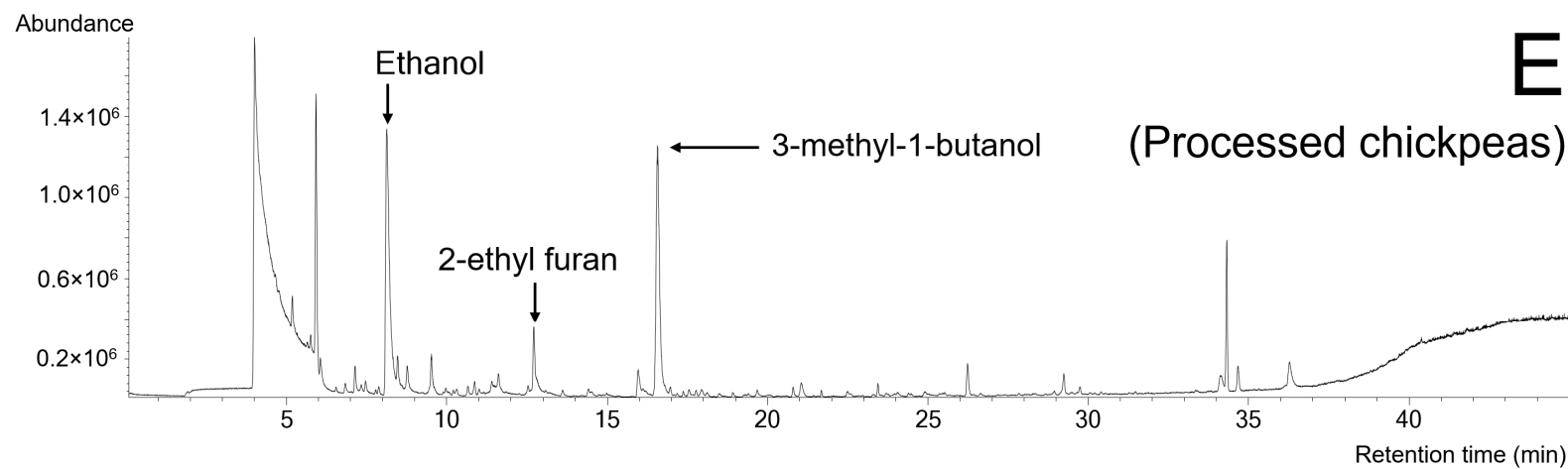


Figure S3. Representative total ion chromatograms of cowpeas, chickpeas and kidney beans in the closed system approach. A=soaked cowpeas; B=soaked chickpeas; C=soaked kidney beans; D=processed cowpeas; E=processed chickpeas; F=processed kidney beans.