

Gıdalarda Yağ Asitlerinin GC-FID ile Analizi

Yağlar esas olarak bir gliserol molekülü ve üç yağ asidinin esterleri olan trigliseritlerden oluşur. Yenilebilir yağların ve yağların çoğu esas olarak 12 ila 20 karbonlu yağ asitlerinden (laurik asit (dodekanoik asit) ile arakidik asit (eikosanoik asit)) oluşur. Doymuş yağ asitlerine ek olarak, dallanmış, tekli doymamış, di-doymamış ve daha yüksek doymamış yağ asitleri de bulunur.



Tablo 1 : 8890 - GC- FID Parametreleri

Parameters	
Column	Agilent HP-88
Inlet mode	SS/SL
Carrier mode	Constant flow
Inlet Temperature	250 °C
Septum Purge Flow	3 mL/min
Pressure	33.397 psi
Split Flow	100 mL/min
FID Temperature	250 °C
Helium Make Up Flow	25 mL/min
Air Flow	400 mL/min
Hydrogen Flow	30 mL/min
Injection Volume	1 µl
Carrier Flow	2 mL/min
Carrier Gas	Hidrojen


Tablo 2 : Yağ Asitleri Aıkınma Süreleri

Fatty Acid	Compound	RT (min)
Isobutyric acid	C4:0	4,85
Caproic Acid	C6:0	5,23
Caprylic acid	C8:0	5,89
Capric acid	C10:0	6,92
Undecylic acid	C11:0	7,58
Lauric Acid	C12:0	8,33
Tridecyllic acid	C13:0	9,204
Myristic Acid	C14:0	10,21
Myristoleic Acid	C14:1	11,105
Pentadecanoic Acid	C15:0	11,404
Pentadecenoic Acid	C15:1	12,493
Palmitic Acid	C16:0	12,857
Palmitoleic Acid	C16:1	13,95
Margaric Acid	C17:0	14,638
Heptadecenoic Acid	C17:1	16,022
Stearic Acid	C18:00	16,894
Elaidic Acid	C18:1-trans-(n9)	17,76
Oleic Acid	C18:1-cis-(n9)	18,17
Linolelaidic acid	C18:2-trans-(n6)	19,18
Linoleic Acid	C18:2-cis-(n6)	19,98
Gamma-Linolenic acid +Arachidic acid	C18:3-cis-(n6)+C20:0	21,19
Alpha-Linolenic acid	C18:3-cis-(n3)	21,91
Cis-11-Eicosanoic Acid	C20:1-(n9)	22,234
Henelcosylic acid	C21:0	23,041
Cis-11,14-Eicosadienoic Acid	C20:2	23,758
Behenic Acid+dihomo-gamma-linolenic acid	C22:0+C20:3n6	24,816
DGLA (Dihomo-γ-linolenic Acid)	C20:3 n3	25,585
Erucic Acid	C22:1	25,7
Eicosatetraenoic Acid	C20:4	25,864
Tricosylic acid	C23:0	26,723
Docosadienoic Acid	C22:2	27,652
Eicosapentaenoic acid	C20:5	27,835
Lignoceric Acid	C24:0	28,886
Tetracosanoic acid	C24:1	30,071
Docosahexaenoic Acid	C22:6	32,87

