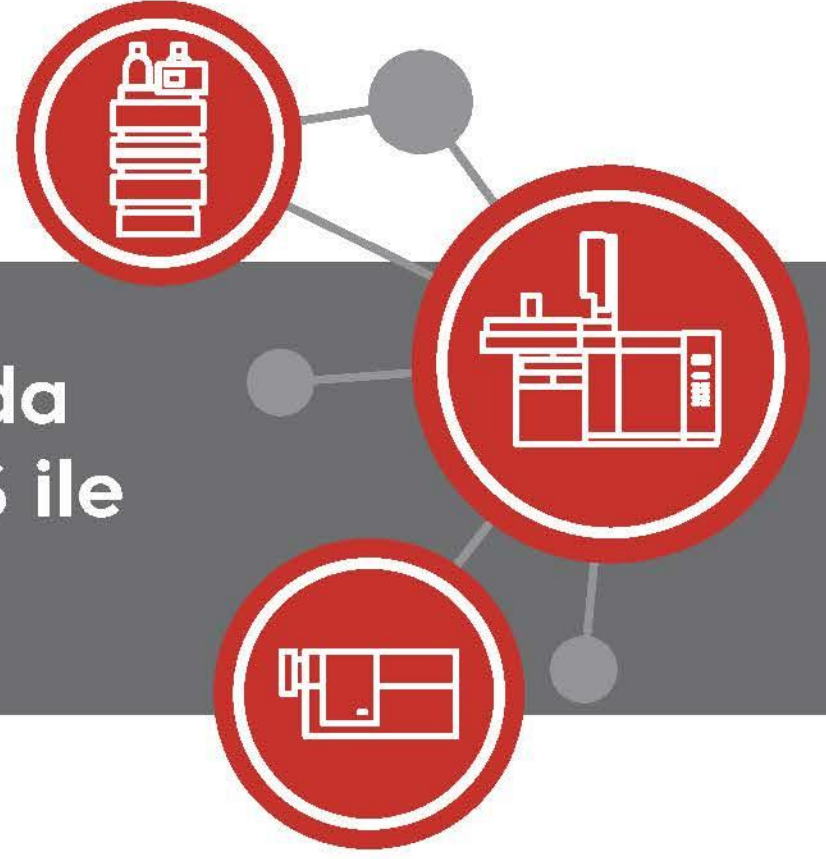


İçme Suyu ve Yüzey Sularında Çoklu Pestisitlerin LC-MS-MS ile Analizi



Endüstriyel ve atık suların direk deşarjı, atıkların depolama alanlarındaki sızıntılar, havadan suya taşınan kirleticiler su kaynaklarını tehdit etmektedir. Pestisitlerin biyolojik birikme eğilimleri ve çevrede uzun süre aktif kalmaları çevre, sağlık ve ekosistem açısından büyük tehlike oluşturmaktadır. Bu nedenle pestisitlerin gıda, su ve çevrede izlenmeleri çevresel değerlendirme ve kirlilik kontrolü için önemlidir.

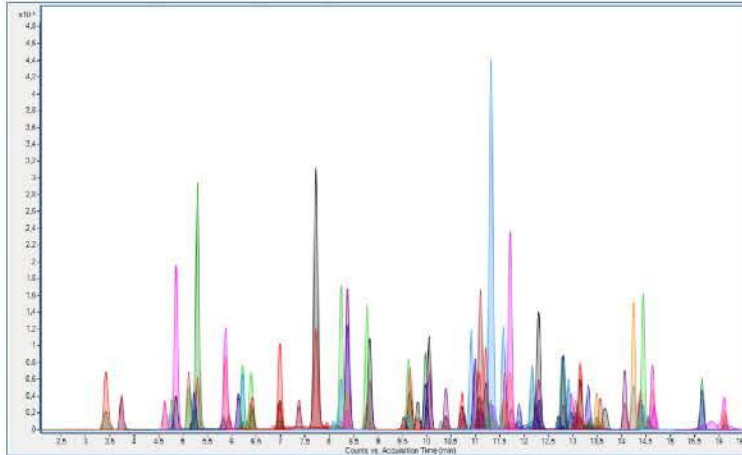


Tablo 1 : Agilent 1260 Infinity III LC Parametreleri

Parameters	
Column	Poroshell 120 SB-C18
Temperature	30 °C
Injection volume	40 µL
Run Time	22 min
Mobile phase A	% 0.1 Formic Acid, 5 Mm Ammonium Formate
Mobile phase B	Methanol

Tablo 2 : Agilent 6475 QQQ

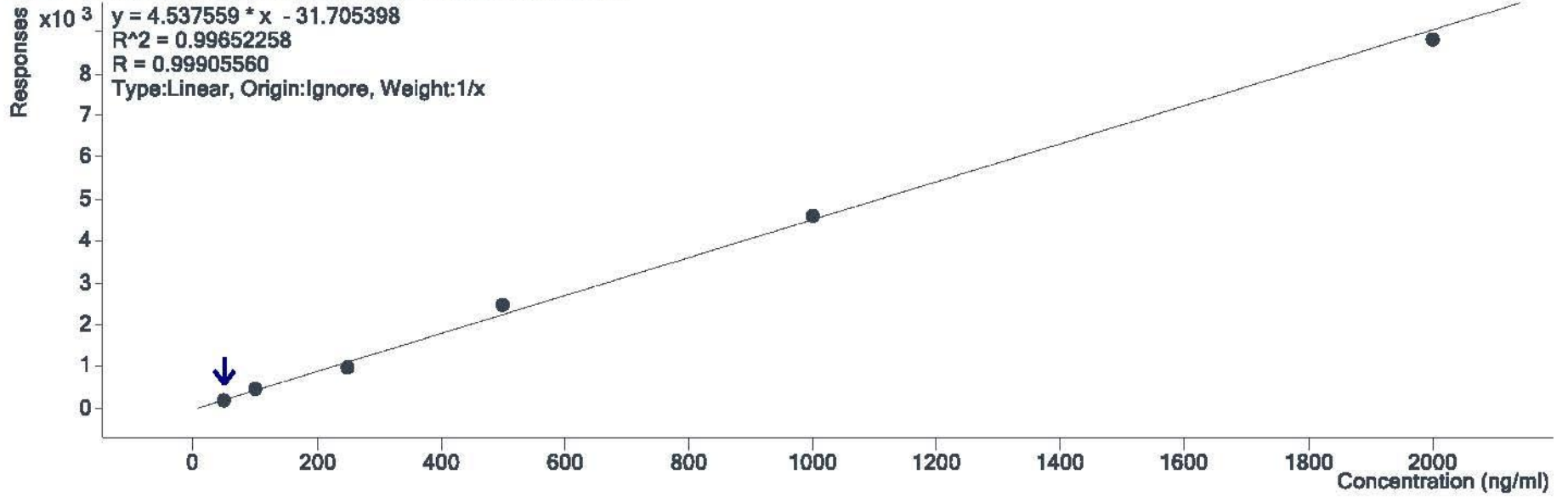
Parameters	
Ionization mode	Positive Agilent ESI
Scan type	dMRM
Drying gas temperature	200 °C
Drying gas flow	11 L/min
Sheath gas temp	350 psi
Sheath gas flow	12 L/min
Nebulizer pressure	35 psi
Capillary voltage + -	3000 V(+) 3500 V(-)


Şekil 1: Çoklu Pestisitlerin kromatogramı
 (Ham su içinde spike yapılmış) (50 ppt)

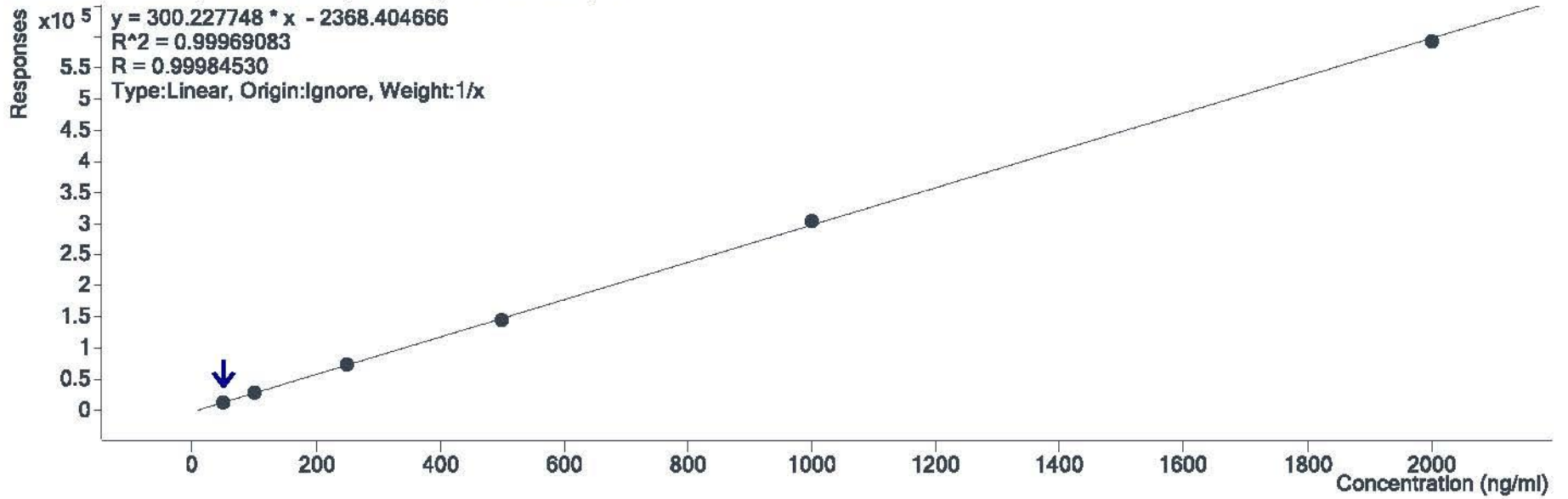
Tablo 3 : Pestisitlerin Alıkonma Süreleri

Pesticides	RT.(min)	Pesticides	RT.(min)
2,4-D	9,56	Hexythiazox	14,52
3-Hydroxycarbofuran	6,00	Imazalil	9,44
Acetamiprid	6,26	Imidacloprid	5,71
Acetochlor	11,95	Linuron	10,61
Alachlor	12,05	Malathion	11,19
Aldicarb	7,22	Metalaxyl	9,89
Aldicarb sulfone	4,68	Methamidophos	3,24
Aldicarb sulfoxide	4,53	Methiocarb	10,85
Atrazine	9,51	Methomyl	5,03
Azinphos-ethyl	11,76	Methoxyfenozide	11,44
Azinphos-methyl	10,23	Metolachlor	12,16
Azoxystrobin	10,78	Mevinphos	6,82
Bentazone	7,77	Molinate	11,54
Bifenthrin	16,00	Myclobutanil	11,47
Boscalid	10,99	Oxadiazon	14,23
Bromoxynil	9,25	Oxamyl	4,76
Buprofezin	14,13	Pebulate	13,38
Carbaryl	8,66	Penconazole	12,69
Carbendazim	5,21	Pendimethalin	14,58
Carbofuran	8,21	Pirimicarb	7,55
Carboxin	8,61	Prochloraz	13,20
Chlorantraniliprole	10,14	Propiconazole	12,97
Chlorfenvinphos	12,84	Propoxur	8,08
Chloridazon	6,29	Propyzamide	11,21
Chlorpyrifos	14,47	Pyraclostrobin	13,02
Chlorpyrifos-methyl	13,29	Pyridaben	15,55
Clothianidin	5,81	Pyrimethanil	10,24
Cyprodinil	12,16	Pyriproxyfen	14,34
Cyromazine	3,61	Simazine	8,22
Diazinon	12,79	Spiroxamine	11,18
Dichlorvos	8,06	Tebuconazole	12,66
Difenoconazole	13,54	Terbutylazine	10,95
Diflubenzuron	12,10	Terbutryn	11,16
Diflufenican	13,44	Thiabendazole	5,82
Dimethoate	6,08	Thiacloprid	6,84
Diniconazole	13,37	Thiamethoxam	5,12
Disulfoton	13,21	Triadimenol	11,60
Diuron	9,82	Triasulfuron	8,00
Ethion	14,28	Triazophos	11,57
Ethoprophos	12,00	Tribenuron-methyl	9,65
Etofenprox	16,02	Triclosan	13,60
Fenpropimorph	10,65	Triflumuron	12,94
Fenthion	12,58	Flutriafol	9,47
Fluazifop-P-butyl	13,97		

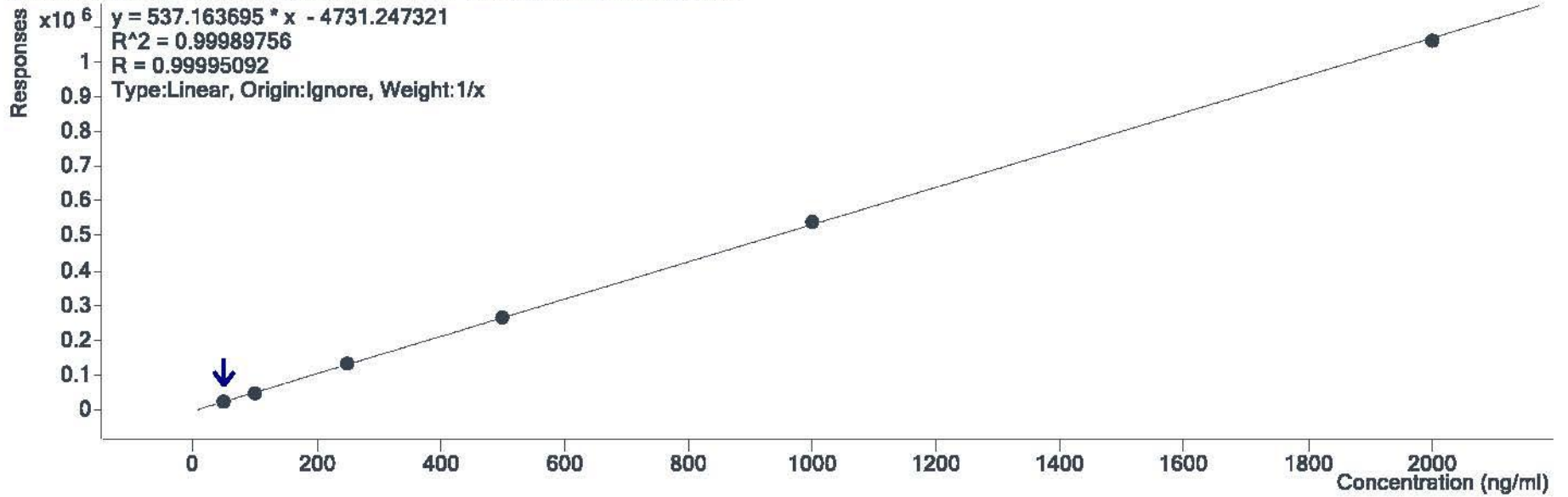
2,4-D - 6 Levels, 6 Levels Used, 6 Points, 6 Points Used, 0 QCs



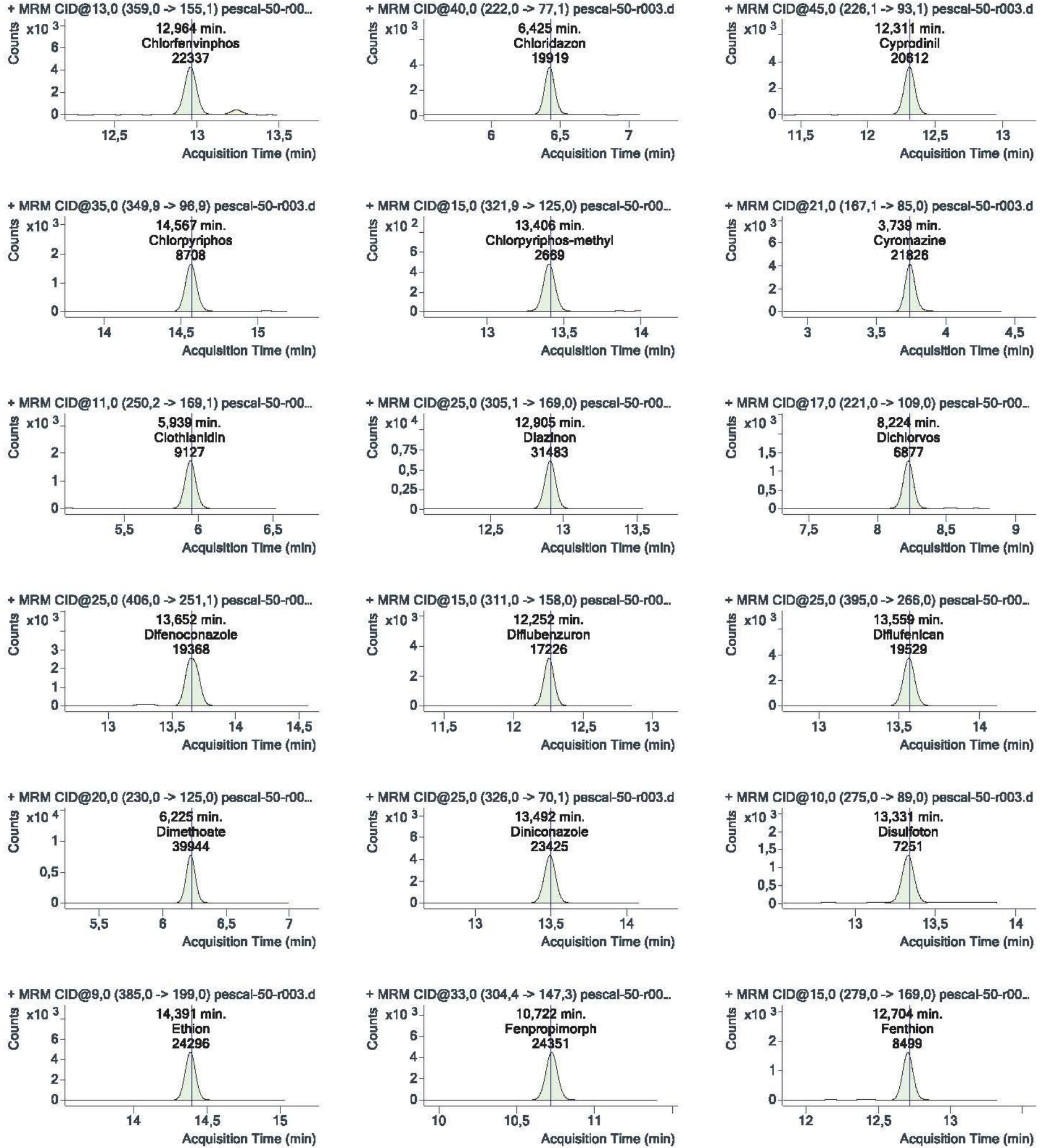
Boscalid - 6 Levels, 6 Levels Used, 6 Points, 6 Points Used, 0 QCs



Chlorfenvinphos - 6 Levels, 6 Levels Used, 6 Points, 6 Points Used, 0 QCs



Şekil 2: Pestisitlerin Kalibrasyon Grafikleri (100 ppt ve 2000 ppt)



Şekil 3: Pestisitlerin Kromatogramları (50 ppt)