## C avantor"

Chromatography Solutions
Application note \#3120

300 Pesticides by LC-MS/MS


Avantor ${ }^{\circledR}$ ACE ${ }^{\circledR}$

## Method Details

## CONDITIONS

Column:
Dimensions:
Mobile Phases:

Gradient:

Flow Rate:
Injection:
Temperature:
Detection:

Sample:

Avantor® ACE ${ }^{\circledR}$ UltraCore 2.5 SuperC18
$100 \times 2.1 \mathrm{~mm}$
A: 5 mM ammonium formate in $\mathrm{H}_{2} \mathrm{O} / \mathrm{MeOH}(9: 1 \mathrm{v} / \mathrm{v})$
B: 5 mM ammonium formate in $\mathrm{H}_{2} \mathrm{O} / \mathrm{MeOH}(1: 9 \mathrm{v} / \mathrm{v})$

| Time (mins) | \% B |
| :---: | :---: |
| $\mathbf{0 . 0}$ | 30 |
| $\mathbf{0 . 5}$ | 30 |
| $\mathbf{1 5 . 0}$ | 100 |
| 22.0 | 100 |
| 22.1 | 30 |
| 27.0 | 30 |

$0.3 \mathrm{~mL} / \mathrm{min}$
$6 \mu \mathrm{~L}$
$24^{\circ} \mathrm{C}$
AB SCIEX 4000 QTRAP
TurbolonSpray ESI positive mode
Capillary voltage: 5000 V
Heater gas temperature: $450^{\circ} \mathrm{C}$
Sample prepared using QuEChERs methodology.
Method validated using cucumber matrix spiked at $0.01 \mathrm{mg} / \mathrm{kg}$.
265 analytes successfully validated (analytes in blue).

ORDERING TABLE

| Product | Details | Size | Part Number |
| :--- | :--- | :--- | :--- |
| Avantor ${ }^{\text {ACE }}$ UltraCore 2.5 SuperC18 | HPLC Column | $100 \times 2.1 \mathrm{~mm}$ | CORE-25A-1002U |

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## ANALYTES

| Analyte | $\mathrm{t}_{\mathrm{R}} / \mathrm{mins}$ | MRM Transitions (m/z) |
| :---: | :---: | :---: |
| 3-Hydroxycarbofuran | 3.5 | $238.1 \rightarrow 163.1,238.1 \rightarrow 181.1$ |
| Acephate. | 1.0 | $184.1 \rightarrow 142.9,184.1 \rightarrow 124.8$ |
| Acetamiprid | 3.6 | $223.2 \rightarrow$ 126.1, $225.2 \rightarrow 128.1$ |
| Aclonifen | 13.9 | $265.0 \rightarrow 248.0,267.0 \rightarrow 250.0$ |
| Alachlor | 12.9 | $270.2 \rightarrow 238.2,270.2 \rightarrow 162.1$ |
| Aldicarb | 5.4 | $208.0 \rightarrow 89.0,208.0 \rightarrow 116.0$ |
| Aldicarb sulfone | 1.2 | $240.0 \rightarrow 86.0,223.0 \rightarrow 148.0$ |
| Aldicarb sulfoxide | 1.1 | $207.0 \rightarrow 132.0,207.2 \rightarrow 88.9$ |
| Ametryn | 11.1 | $228.2 \rightarrow 186.1,228.2 \rightarrow 68.0$ |
| Aminopyralid | 0.8 | $207.0 \rightarrow 160.9,207.0 \rightarrow 133.9$ |
| Amitrole | 0.8 | $85.1 \rightarrow 58.1,85.1 \rightarrow 57.1$ |
| Atrazine | 9.3 | $216.2 \rightarrow$ 174.0, $218.1 \rightarrow 176.1$ |
| Atrazine-desethyl | 4.4 | $188.2 \rightarrow 146.0,190.1 \rightarrow 148.0$ |
| Atrazine-desisopropyl | 2.4 | $174.1 \rightarrow 104.1,174.1 \rightarrow 132.1$ |
| Avermectin B1a | 18.2 | $876.5 \rightarrow 553.0,876.5 \rightarrow 291.0$ |
| Avermectin B1b | 19.1 | $890.5 \rightarrow 305.0,890.5 \rightarrow 567.0$ |
| Azamethiphos | 6.9 | $325.0 \rightarrow 183.0,325.0 \rightarrow 138.9$ |
| Azinphos-ethyl | 13.0 | $346.0 \rightarrow 132.1,346.0 \rightarrow 160.1$ |
| Azinphos-methyl | 10.9 | $318.1 \rightarrow 132.1,318.1 \rightarrow 260.8$ |
| Aziprotryne | 11.8 | $226.0 \rightarrow 156.0,226.0 \rightarrow 125.0$ |
| Azoxystrobin | 11.4 | $404.2 \rightarrow 372.3,404.2 \rightarrow 344.1$ |
| Benalaxyl | 14.0 | $326.2 \rightarrow 148.1,326.2 \rightarrow 294.1$ |
| Benfuracarb | 15.7 | $411.2 \rightarrow 252.1,411.2 \rightarrow 195.1$ |
| Benthiavalicarb-isopropyl | 12.0 | $382.3 \rightarrow 116.0,382.3 \rightarrow 197.0$ |
| Bifenazate | 12.5 | $301.2 \rightarrow 198.1,301.2 \rightarrow 170.2$ |
| Bifenox | 14.9 | $359.0 \rightarrow 342.0,359.0 \rightarrow 310.0$ |
| Bifenthrin | 21.0 | $440.0 \rightarrow 181.1,440.0 \rightarrow 166.1$ |
| Bitertanol | 14.6 | $338.2 \rightarrow 269.0,338.2 \rightarrow 99.1$ |
| Bixafen | 13.6 | $414.0 \rightarrow 393.9,416.1 \rightarrow 395.9$ |
| Boscalid | 11.7 | $343.1 \rightarrow 306.8,343.1 \rightarrow 139.9$ |
| Bromfenvinfos-ethyl | 14.3 | $405.0 \rightarrow 155.0,403.0 \rightarrow 155.0$ |
| Bromuconazole A | 12.2 | $378.0 \rightarrow 159.1,378.0 \rightarrow 161.0$ |


| Analyte | $\mathrm{t}_{\mathrm{R}} / \mathrm{mins}$ | MRM Transitions ( $\mathrm{m} / \mathrm{z}$ ) |
| :---: | :---: | :---: |
| Bromuconazole B | 13.5 | $378.1 \rightarrow 159.1,378.1 \rightarrow 161.0$ |
| Bupirimate | 13.5 | $317.2 \rightarrow$ 166.2, $317.2 \rightarrow 107.9$ |
| Buprofezin | 16.1 | $306.3 \rightarrow 201.1,306.3 \rightarrow 116.1$ |
| Cadusafos | 14.8 | $271.1 \rightarrow$ 158.9, $271.1 \rightarrow 214.9$ |
| Carbaryl | 8.3 | $202.2 \rightarrow$ 145.1, $202.2 \rightarrow 127.1$ |
| Carbendazim | 4.7 | $192.2 \rightarrow 160.1,192.0 \rightarrow 132.0$ |
| Carbofuran | 7.4 | $222.2 \rightarrow$ 165.1, $222.2 \rightarrow 122.9$ |
| Carbosulfan | 19.3 | $381.2 \rightarrow 160.1,381.2 \rightarrow 118.1$ |
| Carboxin | 8.3 | $236.1 \rightarrow 143.1,236.1 \rightarrow 87.0$ |
| Carfentrazone-ethyl | 13.8 | $412.2 \rightarrow 345.9,412.2 \rightarrow 383.9$ |
| Chlorantraniliprole | 10.7 | $484.0 \rightarrow 452.9,484.0 \rightarrow 285.9$ |
| Chlorbromuron | 11.7 | 295.1 $\rightarrow$ 205.9, $293.1 \rightarrow 182.0$ |
| Chlorfenvinfos A | 14.3 | $359.0 \rightarrow 155.0,358.9 \rightarrow 99.0$ |
| Chloridazon | 3.7 | $222.1 \rightarrow$ 104.0, $222.1 \rightarrow 77.1$ |
| Chlorpyrifos | 16.8 | $349.9 \rightarrow 198.1,349.9 \rightarrow 115.0$ |
| Chlorpyrifos-methyl | 15.2 | $322.0 \rightarrow 124.9,324.0 \rightarrow 125.1$ |
| Chlortoluron | 9.1 | $213.2 \rightarrow 72.0,215.1 \rightarrow 72.1$ |
| Cinidon-ethyl | 16.3 | $394.0 \rightarrow 348.0,394.0 \rightarrow 366.0$ |
| Clethodim A | 12.8 | $360.1 \rightarrow 164.1,360.1 \rightarrow 268.1$ |
| Clethodim B | 10.2 | $360.1 \rightarrow 164.1,360.1 \rightarrow 268.1$ |
| Clofentezine | 15.1 | $303.1 \rightarrow$ 137.9, $305.1 \rightarrow 102.0$ |
| Clomazone | 10.7 | $240.1 \rightarrow$ 124.9, $242.2 \rightarrow 127.1$ |
| Cloquintocet-mexyl | 16.1 | $336.2 \rightarrow 238.0,336.2 \rightarrow 192.1$ |
| Clothianidin | 2.9 | $250.1 \rightarrow 169.0,250.1 \rightarrow 132.0$ |
| Coumaphos | 14.3 | $363.0 \rightarrow 227.0,363.0 \rightarrow 211.1$ |
| Cyanazine | 6.7 | $241.1 \rightarrow 214.1,243.1 \rightarrow 216.1$ |
| Cyazofamid | 13.2 | $325.2 \rightarrow 107.9,327.2 \rightarrow 107.9$ |
| Cycloate | 14.9 | $216.2 \rightarrow 83.1,216.2 \rightarrow 154.1$ |
| Cycloxydim A | 13.1 | $326.3 \rightarrow 280.0,326.3 \rightarrow 180$ |
| Cycloxydim B | 8.4 | $326.3 \rightarrow 280.0,326.3 \rightarrow 180$ |
| Cymoxanil | 4.2 | $199.2 \rightarrow 128.0,199.2 \rightarrow 111.1$ |
| Cyproconazole A | 12.5 | $292.0 \rightarrow 70.0,292.0 \rightarrow 125.0$ |


| Analyte | $\mathrm{t}_{\mathrm{R}} / \mathrm{mins}$ | MRM Transitions (m/z) |
| :---: | :---: | :---: |
| Cyproconazole B | 12.0 | $292.0 \rightarrow 70.0,292.0 \rightarrow 125.0$ |
| Cyprodinil A | 14.1 | $226.2 \rightarrow 93.0,226.2 \rightarrow 77.0$ |
| Demeton-S-methyl | 7.7 | $231.1 \rightarrow 88.8,231.1 \rightarrow 61.0$ |
| Demeton-S-methyl sulfone | 1.6 | $263.0 \rightarrow 168.9,263.0 \rightarrow 120.8$ |
| Desmedipham | 10.6 | $318.1 \rightarrow 182.1,318.1 \rightarrow 136.0$ |
| Desmethyl-pirimicarb | 5.8 | $225.2 \rightarrow 72.0,225.2 \rightarrow 168.1$ |
| Diafenthiuron | 17.4 | $385.2 \rightarrow 329.2,385.2 \rightarrow 278.2$ |
| Diazinon | 14.2 | $305.1 \rightarrow 169.1,305.1 \rightarrow 97.0$ |
| Dichlofluanid | 12.8 | $333.0 \rightarrow 223.9,333.0 \rightarrow 122.9$ |
| Diclobutrazol A | 13.7 | $328.0 \rightarrow 70.0,330.0 \rightarrow 70.0$ |
| Dicrotofos | 2.1 | $238.1 \rightarrow 112.1,238.1 \rightarrow 193.1$ |
| Diethofencarb | 11.1 | $268.1 \rightarrow 226.1,268.1 \rightarrow 124.0$ |
| Difenoconazole | 14.8 | $406.1 \rightarrow 251.1,408.2 \rightarrow 253.1$ |
| Diflubenzuron | 13.5 | $311.0 \rightarrow 158.2,311.0 \rightarrow 141.1$ |
| Diflufenican | 15.4 | $395.0 \rightarrow 266.0,395.0 \rightarrow 246.0$ |
| Dimethachlor | 10.2 | $256.2 \rightarrow 224.0,256.2 \rightarrow 148.1$ |
| Dimethenamid | 11.3 | $276.1 \rightarrow 244.0,278.1 \rightarrow 246.0$ |
| Dimethoate | 3.6 | $230.1 \rightarrow 198.8,230.1 \rightarrow 124.9$ |
| Dimethomorph | 11.7 | $388.1 \rightarrow 301.0,388.1 \rightarrow 165.1$ |
| Dimoxystrobin | 13.7 | $327.1 \rightarrow 205.0,327.1 \rightarrow 116.0$ |
| Diniconazole | 14.8 | $326.0 \rightarrow 70.0,328.0 \rightarrow 70.0$ |
| Disulfoton | 15.0 | $275.1 \rightarrow 89.0,275.1 \rightarrow 61.0$ |
| Disulfoton sulfone | 9.6 | $307.1 \rightarrow$ 153.0, $307.1 \rightarrow 171.0$ |
| Disulfoton sulfoxide | 9.2 | $291.1 \rightarrow 212.9,291.1 \rightarrow 185.0$ |
| Ditalimfos | 13.1 | $300.1 \rightarrow 148.0,300.1 \rightarrow 130.0$ |
| Diuron | 10.0 | $233.1 \rightarrow 71.9,235.1 \rightarrow 72.0$ |
| DMST | 8.0 | $215.2 \rightarrow 106.0,215.2 \rightarrow 78.9$ |
| Dodine | 13.6 | $228.3 \rightarrow 57.0,228.3 \rightarrow 60.1$ |
| Epoxiconazole | 12.9 | $330.1 \rightarrow$ 120.9, $330.1 \rightarrow 75.2$ |
| Ethion | 16.5 | $385.0 \rightarrow 199.0,385.0 \rightarrow 143.0$ |
| Ethirimol | 9.7 | $210.3 \rightarrow 140.1,210.3 \rightarrow 98.0$ |
| Ethofumesate | 11.3 | $287.1 \rightarrow 121.0,287.1 \rightarrow 259.0$ |


| Analyte | $\mathrm{t}_{\mathrm{R}} / \mathrm{mins}$ | MRM Transitions (m/z) |
| :---: | :---: | :---: |
| Ethoprofos | 12.7 | $243.0 \rightarrow 131.0,243.0 \rightarrow 97.0$ |
| Ethoxyquin A | 12.9 | $218.2 \rightarrow 148.0,218.2 \rightarrow 174.1$ |
| Ethoxyquin B | 10.7 | $218.2 \rightarrow 148.0,218.2 \rightarrow 174.1$ |
| Etofenprox | 20.6 | $394.0 \rightarrow 177.0,394.0 \rightarrow 359.0$ |
| Etrimfos | 14.2 | $293.1 \rightarrow 125.0,293.1 \rightarrow 265.1$ |
| Famoxadone $\mathrm{NH}_{4}^{+}$ | 14.4 | $392.0 \rightarrow 331.0,392.0 \rightarrow 238.0$ |
| Fenamidone | 11.5 | $312.1 \rightarrow 92.1,312.1 \rightarrow 236.1$ |
| Fenamifos | 13.4 | $304.0 \rightarrow 217.0,304.0 \rightarrow 202.0$ |
| Fenamifos sulfone | 8.4 | $336.0 \rightarrow 308.0,336.0 \rightarrow 266.0$ |
| Fenamifos sulfoxide | 7.9 | $320.0 \rightarrow 171.0,320.0 \rightarrow 233.0$ |
| Fenarimol | 12.7 | $331.2 \rightarrow 268.0,331.2 \rightarrow 139.0$ |
| Fenazaquin | 18.0 | $307.1 \rightarrow 161.1,307.1 \rightarrow 147.0$ |
| Fenbuconazole | 13.2 | $337.0 \rightarrow 124.9,337.0 \rightarrow 70.0$ |
| Fenbutatin oxide | 22.9 | $519.3 \rightarrow 463.3,519.3 \rightarrow 197.0$ |
| Fenhexamid | 12.6 | $302.2 \rightarrow 96.9,304.2 \rightarrow 97.0$ |
| Fenoxycarb | 13.6 | $302.2 \rightarrow 87.9,302.2 \rightarrow 116.0$ |
| Fenpropathrin | 17.3 | $367.0 \rightarrow 125.0,350.0 \rightarrow 125.0$ |
| Fenpropidin | 10.8 | $274.0 \rightarrow 147.0,274.0 \rightarrow 117.0$ |
| Fenpropimorph | 18.7 | $304.0 \rightarrow 147.0,304.0 \rightarrow 117.0$ |
| Fenpyroximate | 17.4 | $422.2 \rightarrow 366.1,422.2 \rightarrow 135.1$ |
| Fensulfothion | 10.0 | $309.1 \rightarrow 280.8,309.1 \rightarrow 252.9$ |
| Fensulfothion sulfone | 10.4 | $325.1 \rightarrow 268.9,325.1 \rightarrow 297.0$ |
| Fenthion sulfone | 9.0 | $311.1 \rightarrow 125.0,311.1 \rightarrow 278.8$ |
| Fenthion sulfoxide | 8.4 | $295.1 \rightarrow 279.7,295.1 \rightarrow 108.9$ |
| Flonicamid | 1.7 | $230.0 \rightarrow 203.0,230.0 \rightarrow 148.0$ |
| Flubendiamide $\mathrm{NH}_{4}^{+}$ | 13.8 | $700.0 \rightarrow 407.9,682.9 \rightarrow 407.9$ |
| Fludioxonil $\mathrm{NH}_{4}^{+}$ | 11.8 | $266.0 \rightarrow 229.0,266.0 \rightarrow 227.1$ |
| Flufenacet | 12.8 | $364.1 \rightarrow 194.1,364.1 \rightarrow 152.2$ |
| Flufenoxuron | 17.1 | $489.0 \rightarrow 158.0,489.0 \rightarrow 141.1$ |
| Flumethrin $\mathrm{NH}_{4}^{+}$ | 20.2 | $527.2 \rightarrow 510.0,527.2 \rightarrow 267.0$ |
| Flumetsulam | 2.0 | $326.2 \rightarrow 128.8,326.2 \rightarrow 128.3$ |
| Flumioxazin | 10.7 | $355.0 \rightarrow 327.0,355.0 \rightarrow 299.0$ |


| Analyte | $\mathrm{t}_{\mathrm{R}} / \mathrm{mins}$ | MRM Transitions ( $\mathrm{m} / \mathrm{z}$ ) |
| :---: | :---: | :---: |
| Fluometuron | 8.9 | $233.0 \rightarrow 72.0,233.0 \rightarrow 160.0$ |
| Fluopicolide | 11.9 | $383.0 \rightarrow 173.0,385.1 \rightarrow 174.9$ |
| Fluopiram | 12.5 | $397.0 \rightarrow 173.0,397.0 \rightarrow 208.0$ |
| Fluoxastrobin | 12.8 | $459.1 \rightarrow 427.1,459.1 \rightarrow 188.1$ |
| Fluquinconazole | 12.6 | $376.1 \rightarrow 307.1,376.1 \rightarrow 349.1$ |
| Flusilazole | 13.3 | $316.2 \rightarrow 247.0,316.2 \rightarrow 165.1$ |
| Flutolanil | 12.0 | $324.0 \rightarrow 262.0,324.0 \rightarrow 242.0$ |
| Flutriafol | 9.7 | $302.1 \rightarrow 70.1,302.1 \rightarrow 123.0$ |
| Fomesafen (NH4-Adduct) | 11.3 | $456.1 \rightarrow 344.0,458.1 \rightarrow 346.0$ |
| Fonofos | 14.3 | $247.0 \rightarrow$ 109.0, $247.0 \rightarrow 127.0$ |
| Fosthiazate | 8.9 | $284.1 \rightarrow 227.9,284.1 \rightarrow 104.0$ |
| Fuberidazole | 6.9 | $185.0 \rightarrow 157.0,185.0 \rightarrow 65.0$ |
| Furathiocarb | 15.9 | $383.1 \rightarrow 195.0,383.1 \rightarrow 252.1$ |
| Heptenofos | 10.1 | $251.0 \rightarrow 127.0,251.0 \rightarrow 124.8$ |
| Hexaconazole | 14.3 | $314.0 \rightarrow 70.0,316.0 \rightarrow 70.0$ |
| Hexaflumuron | 15.5 | $461.1 \rightarrow$ 158.2, $461.1 \rightarrow 141.1$ |
| Hexazinone | 7.3 | $253.2 \rightarrow 71.0,253.2 \rightarrow 85.0$ |
| Hexythiazox | 16.6 | $353.0 \rightarrow 168.0,353.0 \rightarrow 228.0$ |
| Imazalil | 13.6 | $297.2 \rightarrow 159.1,299.1 \rightarrow 160.9$ |
| Imidacloprid | 2.7 | $256.1 \rightarrow 209.0,256.1 \rightarrow 175.0$ |
| Indoxacarb | 15.2 | $528.1 \rightarrow 248.9,528.1 \rightarrow 292.9$ |
| Ipconazole | 15.3 | $334.2 \rightarrow 70.0,334.2 \rightarrow 125.0$ |
| Iprodione | 13.3 | $332.1 \rightarrow 246.9,330.0 \rightarrow 245.0$ |
| Iprovalicarb | 12.6 | $321.3 \rightarrow 119.0,321.3 \rightarrow 203.1$ |
| Isofenfos | 14.7 | $346.1 \rightarrow 245.1,346.1 \rightarrow 217.1$ |
| Isofenfos-methyl | 13.8 | $332.1 \rightarrow 231.0,332.1 \rightarrow 273.0$ |
| Isoprocarb | 9.4 | $194.1 \rightarrow 95.0,194.1 \rightarrow 137.0$ |
| Isoprothiolane | 12.1 | $291.1 \rightarrow 231.0,291.1 \rightarrow 189.0$ |
| Isoproturon | 9.7 | $207.2 \rightarrow 72.0,207.2 \rightarrow 165.2$ |
| Isoxadifen-ethyl | 13.9 | $313.2 \rightarrow 296.1,313.2 \rightarrow 263.0$ |
| Isoxaflutole | 10.0 | $360.1 \rightarrow 251.1,377.0 \rightarrow 251.0$ |
| Kresoxim-methyl | 13.9 | $314.0 \rightarrow$ 116.0, 314.0 ${ }^{\text {l }} 131.1$ |


| Analyte | $\mathrm{t}_{\mathrm{R}} / \mathrm{mins}$ | MRM Transitions ( $\mathrm{m} / \mathrm{z}$ ) |
| :---: | :---: | :---: |
| Lenacil | 9.5 | $235.3 \rightarrow 153.2$, $235.3 \rightarrow 136.2$ |
| Linuron | 11.3 | $249.0 \rightarrow 159.9,249.0 \rightarrow 182.0$ |
| Lufenuron | 16.4 | $511.0 \rightarrow 158.0,511.0 \rightarrow 141.0$ |
| Malaoxon | 7.9 | $315.1 \rightarrow 99.1,315.1 \rightarrow 127.1$ |
| Mandipropamid | 11.9 | $412.1 \rightarrow 328.1,412.2 \rightarrow 125.0$ |
| Mecarbam | 13.0 | $330.1 \rightarrow 227.0,330.1 \rightarrow 198.9$ |
| Mepanipyrim | 12.9 | $224.2 \rightarrow 106.0,224.2 \rightarrow 77.1$ |
| Mepronil | 12.1 | $270.1 \rightarrow 119.0,270.1 \rightarrow 228.1$ |
| Mesotrione | 1.2 | $340.0 \rightarrow 228.0,357.1 \rightarrow 227.9$ |
| Metaflumizone | 16.1 | $507.1 \rightarrow 178.1,507.1 \rightarrow 287.1$ |
| Metalaxyl | 9.8 | $280.1 \rightarrow 220.2,280.1 \rightarrow 192.2$ |
| Metamitron | 3.4 | $203.1 \rightarrow$ 175.0, $203.1 \rightarrow 104.2$ |
| Metazachlor | 9.6 | $278.1 \rightarrow 209.9,278.1 \rightarrow 134.2$ |
| Metconazole | 14.4 | $320.1 \rightarrow 70.0,320.1 \rightarrow 125.0$ |
| Methacrifos | 10.7 | $241.0 \rightarrow 208.9,241.0 \rightarrow 124.9$ |
| Methamidofos | 0.9 | $142.0 \rightarrow 93.9,142.0 \rightarrow 112.1$ |
| Methiocarb | 11.4 | $226.2 \rightarrow$ 169.1, $226.2 \rightarrow 121.2$ |
| Methiocarb sulfone | 4.1 | $258.1 \rightarrow 122.0,258.1 \rightarrow 200.9$ |
| Methiocarb sulfoxide | 3.0 | $242.1 \rightarrow$ 185.0, $242.1 \rightarrow 122.1$ |
| Methomyl | 1.6 | $163.0 \rightarrow 106.0,163.0 \rightarrow 88.0$ |
| Methoxyfenozide | 12.2 | $369.1 \rightarrow 149.1,369.1 \rightarrow 313.2$ |
| Metobromuron | 9.4 | $259.0 \rightarrow 170.0,259.0 \rightarrow 148.1$ |
| Metolachlor | 13.0 | $284.1 \rightarrow 252.0,286.1 \rightarrow 254.0$ |
| Metoxuron | 5.7 | $229.1 \rightarrow 72.0,231.1 \rightarrow 71.9$ |
| Metrafenone | 14.8 | $409.2 \rightarrow 209.1,411.2 \rightarrow 209.1$ |
| Metribuzin | 7.1 | $215.2 \rightarrow 187.1,215.2 \rightarrow 84.1$ |
| Mevinfos A | 4.9 | $225.0 \rightarrow$ 193.0, $225.0 \rightarrow 127.0$ |
| Mevinfos B | 3.4 | $225.0 \rightarrow$ 193.0, $225.0 \rightarrow 127.0$ |
| Molinate | 12.0 | $188.2 \rightarrow 126.2,188.2 \rightarrow 55.1$ |
| Monocrotofos | 1.8 | $224.2 \rightarrow$ 192.9, $224.2 \rightarrow 126.9$ |
| Monolinuron | 8.7 | $215.1 \rightarrow$ 126.1, $215.1 \rightarrow 148.1$ |
| Myclobutanil | 12.2 | $289.2 \rightarrow 70.0,289.2 \rightarrow 125.0$ |


| Analyte | $\mathrm{t}_{\mathrm{R}} /$ mins | MRM Transitions ( $\mathrm{m} / \mathrm{z}$ ) |
| :---: | :---: | :---: |
| Napropamide | 12.9 | $272.2 \rightarrow$ 129.1, $272.2 \rightarrow 171.1$ |
| Nitenpyram | 1.3 | $271.1 \rightarrow$ 189.2, $271.1 \rightarrow 126.0$ |
| Novaluron | 15.6 | $493.0 \rightarrow 158.1,493.0 \rightarrow 141.1$ |
| Nuarimol | 11.2 | $315.0 \rightarrow 252.0,315.0 \rightarrow 81.0$ |
| Ofurace | 7.6 | $282.0 \rightarrow 160.1,282.0 \rightarrow 236.3$ |
| Omethoate | 1.0 | $214.0 \rightarrow 183.0,214.0 \rightarrow 125.0$ |
| Oxadiazon | 16.2 | $345.0 \rightarrow 220.0,345.0 \rightarrow 303.0$ |
| Oxadixyl | 6.4 | $279.0 \rightarrow 219.0,279.0 \rightarrow 133.0$ |
| Oxamyl NH4+ | 1.2 | $237.1 \rightarrow 72.0,220.2 \rightarrow 72.0$ |
| Oxycarboxin | 4.5 | $268.1 \rightarrow 174.9,268.1 \rightarrow 147.0$ |
| Oxydemeton-methyl | 1.4 | $247.0 \rightarrow 108.9,247.0 \rightarrow 168.9$ |
| Paclobutrazol | 11.8 | $294.0 \rightarrow 70.0,294.0 \rightarrow 125.0$ |
| Paraoxon | 9.4 | $275.9 \rightarrow 219.9,275.9 \rightarrow 248.0$ |
| Paraoxon-methyl | 6.1 | $248.1 \rightarrow 202.1,248.1 \rightarrow 90.0$ |
| Parathion | 13.8 | $292.0 \rightarrow 236.0,292.0 \rightarrow 264.1$ |
| Penconazole | 13.7 | $248.1 \rightarrow 70.0,284.1 \rightarrow 159.0$ |
| Pencycuron | 14.8 | $329.3 \rightarrow 125.1,331.3 \rightarrow 127.0$ |
| Pendimethalin | 16.9 | $282.2 \rightarrow 212.1,282.2 \rightarrow 194.1$ |
| Pethoxamid | 12.7 | $296.2 \rightarrow 131.0,296.2 \rightarrow 250.0$ |
| Phenmedipham | 10.8 | $301.2 \rightarrow 168.0,301.2 \rightarrow 136.0$ |
| Phenthoate | 13.9 | $321.0 \rightarrow 247.0,321.0 \rightarrow 275.1$ |
| Phorate sulfone | 9.6 | $293.0 \rightarrow$ 170.8, $293.0 \rightarrow 96.7$ |
| Phorate sulfoxide | 9.2 | $277.0 \rightarrow$ 199.0, $277.0 \rightarrow 171.0$ |
| Phosalone | 14.6 | $368.0 \rightarrow 182.0,369.9 \rightarrow 183.9$ |
| Phosphamidon | 6.4 | $300.2 \rightarrow 127.1,300.2 \rightarrow 226.8$ |
| Phoxim | 14.7 | $299.2 \rightarrow 129.2,299.2 \rightarrow 77.1$ |
| Picloram | 1.2 | $243.0 \rightarrow 224.9,241.0 \rightarrow 222.9$ |
| Picolinafen | 16.2 | $377.1 \rightarrow 238.0,377.1 \rightarrow 359.0$ |
| Picoxystrobin | 13.6 | $368.0 \rightarrow 205.0,368.0 \rightarrow 145.0$ |
| Piperonyl butoxide | 16.2 | $356.2 \rightarrow 177.2,356.2 \rightarrow 119.0$ |
| Pirimicarb | 9.0 | $239.2 \rightarrow 72.0,239.2 \rightarrow 182.3$ |
| Pirimiphos-ethyl | 16.3 | $334.1 \rightarrow 198.0,334.1 \rightarrow 182.3$ |


| Analyte | $\mathrm{t}_{\mathrm{R}} / \mathrm{mins}$ | MRM Transitions (m/z) |
| :---: | :---: | :---: |
| Pirimiphos-methyl | 14.8 | $306.2 \rightarrow 108.0,306.2 \rightarrow 164.3$ |
| Prochloraz | 14.4 | $376.0 \rightarrow 308.0,376.0 \rightarrow 70.0$ |
| Profenofos | 15.6 | $375.0 \rightarrow 304.9,373.0 \rightarrow 302.9$ |
| Prometryn | 12.6 | $242.2 \rightarrow 158.1,242.2 \rightarrow 200.0$ |
| Propachlor | 9.6 | $212.0 \rightarrow$ 170.0, $212.0 \rightarrow 94.1$ |
| Propamocarb | 1.1 | $189.0 \rightarrow 102.0,189.0 \rightarrow 144.0$ |
| Propaquizafop | 16.0 | $444.2 \rightarrow$ 100.0, $444.2 \rightarrow 371.0$ |
| Propargite NH4+ | 17.0 | $368.2 \rightarrow 231.1,368.2 \rightarrow 175.0$ |
| Propazine | 11.0 | $230.2 \rightarrow 188.1,230.2 \rightarrow 146.1$ |
| Propetamfos | 12.4 | $282.1 \rightarrow 138.0,282.1 \rightarrow 156.1$ |
| Propham | 9.4 | $180.1 \rightarrow$ 138.1, $180.1 \rightarrow 120.1$ |
| Propiconazole | 14.0 | $342.1 \rightarrow 159.0,342.1 \rightarrow 69.0$ |
| Propisochlor | 14.0 | $284.2 \rightarrow 224.0,284.2 \rightarrow 148.0$ |
| Propoxur | 7.2 | $210.1 \rightarrow 111.1,210.1 \rightarrow 168.0$ |
| Propyzamide | 11.9 | $256.1 \rightarrow 190.0,256.1 \rightarrow 173.0$ |
| Proquinazid | 17.7 | $373.2 \rightarrow 330.9,373.2 \rightarrow 289.0$ |
| Prosulfocarb | 15.5 | $252.2 \rightarrow 91.0,252.2 \rightarrow 128.1$ |
| Prosulfuron | 9.0 | $420.1 \rightarrow 141.0,420.1 \rightarrow 167.1$ |
| Prothioconazole | 14.1 | $344.1 \rightarrow 326.0,346.1 \rightarrow 328.1$ |
| Prothioconazole-desthio | 13.0 | $312.0 \rightarrow 70.0,312.0 \rightarrow 125.0$ |
| Pymetrozine | 1.5 | $218.0 \rightarrow 105.0,218.0 \rightarrow 78.0$ |
| Pyraclostrobin | 14.5 | $388.1 \rightarrow 194.0,388.1 \rightarrow 163.0$ |
| Pyrazophos | 14.8 | $374.0 \rightarrow 222.0,374.0 \rightarrow 194.0$ |
| Pyridaben | 18.0 | $365.0 \rightarrow 309.0,365.0 \rightarrow 147.0$ |
| Pyridapenthion | 12.4 | $341.0 \rightarrow 189.0,341.0 \rightarrow 205.0$ |
| Pyridate | 19.1 | $379.1 \rightarrow 206.9,379.1 \rightarrow 350.9$ |
| Pyrifenox | 13.0 | $295.1 \rightarrow 93.0,297.1 \rightarrow 93.0$ |
| Pyrimethanil | 11.3 | $200.0 \rightarrow 82.0,200.0 \rightarrow 107.0$ |
| Pyriproxyfen | 16.7 | $322.0 \rightarrow 96.0,322.0 \rightarrow 185.0$ |
| Pyroxsulam | 5.6 | $435.0 \rightarrow 195.1,435.0 \rightarrow 194.0$ |
| Quinalfos | 13.9 | $299.0 \rightarrow 271.0,299.0 \rightarrow 243.0$ |
| Quinoclamine | 6.8 | $208.0 \rightarrow 105.0,208.0 \rightarrow 77.0$ |


| Analyte | $\mathrm{t}_{\mathrm{R}} / \mathrm{mins}$ | MRM Transitions (m/z) |
| :---: | :---: | :---: |
| Quinoxyfen | 16.4 | $308.0 \rightarrow 197.0,308.0 \rightarrow 162.0$ |
| Rotenone | 13.4 | $395.1 \rightarrow 213.1,395.1 \rightarrow 192.0$ |
| Secbumeton | 10.6 | $226.2 \rightarrow 170.1,226.2 \rightarrow 100.0$ |
| Silthiofam | 13.5 | $268.0 \rightarrow 252.0,268.0 \rightarrow 73.0$ |
| Simazine | 7.2 | $202.02 \rightarrow$ 132.1, $202.2 \rightarrow 104.0$ |
| Simetryn | 9.4 | $214.1 \rightarrow 124.1,214.1 \rightarrow 144.0$ |
| Spinosyn A | 17.3 | $732.5 \rightarrow 142.0,732.5 \rightarrow 98.0$ |
| Spinosyn D | 18.3 | $746.5 \rightarrow 142.0,746.5 \rightarrow 98.0$ |
| Spirodiclofen | 17.4 | $313.1 \rightarrow 295.0,313.1 \rightarrow 213.0$ |
| Spiromesifen | 16.8 | $371.2 \rightarrow 273.1,371.2 \rightarrow 255.2$ |
| Spirotetramat | 12.8 | $374.2 \rightarrow 302.2,374.2 \rightarrow 330.2$ |
| Spiroxamine | 13.3 | $298.3 \rightarrow 100.1,298.3 \rightarrow 144.1$ |
| Sulfotep | 14.0 | $323.0 \rightarrow 97.0,323.0 \rightarrow 115.0$ |
| Tau-fluvalinate | 18.9 | $503.0 \rightarrow 208.0,503.0 \rightarrow 181.0$ |
| Tebuconazole | 13.9 | $308.1 \rightarrow 70.0,308.1 \rightarrow 125.0$ |
| Tebufenozide | 13.5 | $353.2 \rightarrow 297.2,353.2 \rightarrow 133.0$ |
| Tebufenpyrad | 15.9 | $334.0 \rightarrow 145.0,334.0 \rightarrow 117.0$ |
| Teflubenzuron | 16.3 | $381.1 \rightarrow 158.2,381.1 \rightarrow 141.2$ |
| Tembotrione ( $\mathrm{NH}_{4}$ adduct) | 5.9 | $458.0 \rightarrow 340.9,458.0 \rightarrow 441.0$ |
| Terbufos | 16.1 | $289.1 \rightarrow 103.1,289.1 \rightarrow 232.9$ |
| Terbufos sulfone | 11.1 | $321.1 \rightarrow 171.0,321.1 \rightarrow 115.0$ |
| Terbufos sulfoxide | 11.0 | $305.1 \rightarrow 187.2,305.1 \rightarrow 131.1$ |
| Terbumeton | 11.3 | $226.2 \rightarrow 170.1,226.2 \rightarrow 142.0$ |
| Terbuthylazine | 11.4 | $230.2 \rightarrow 174.0,232.2 \rightarrow 176.0$ |
| Terbutryn | 12.9 | $242.1 \rightarrow 186.1,242.1 \rightarrow 96.0$ |


| Analyte | $\mathrm{t}_{\mathrm{R}} / \mathrm{mins}$ | MRM Transitions (m/z) |
| :---: | :---: | :---: |
| Tetrachlorvinfos | 13.5 | $367.0 \rightarrow 127.0,365.0 \rightarrow 127.0$ |
| Tetraconazole | 12.9 | $372.0 \rightarrow 159.0,374.0 \rightarrow 161.2$ |
| Thiabendazole | 6.2 | $202.1 \rightarrow 174.9,202.1 \rightarrow 131.0$ |
| Thiacloprid | 4.7 | $253.1 \rightarrow 126.1,253.1 \rightarrow 99.1$ |
| Thiencarbazone-methyl | 2.3 | $391.0 \rightarrow 130.0,391.0 \rightarrow 230.0$ |
| Thiodicarb | 9.2 | $355.0 \rightarrow 88.0,355.0 \rightarrow 108.0$ |
| Thiophanate-methyl | 7.6 | $343.0 \rightarrow 151.1,343.0 \rightarrow 311.0$ |
| Thiamethoxam | 1.7 | $292.0 \rightarrow 211.0,292.0 \rightarrow 181.0$ |
| Tolclophos-methyl | 14.9 | $301.2 \rightarrow 268.9,303.1 \rightarrow 270.9$ |
| Tolylfluanid | 13.9 | $347.0 \rightarrow 237.8,347.0 \rightarrow 137.1$ |
| Topramezone | 1.6 | $364.1 \rightarrow 334.1,364.1 \rightarrow 125.0$ |
| Triadimefon | 12.1 | $294.2 \rightarrow 197.2,294.2 \rightarrow 225.0$ |
| Triadimenol | 12.4 | $296.2 \rightarrow 70.0,298.2 \rightarrow 70.0$ |
| Triallate | 16.7 | $304.1 \rightarrow 142.9,304.1 \rightarrow 86.2$ |
| Triazofos | 12.6 | $314.0 \rightarrow 162.0,314.2 \rightarrow 119.0$ |
| Trichlorfon | 3.4 | $257.0 \rightarrow 108.9,257.0 \rightarrow 220.8$ |
| Tricyclazole | 5.2 | $190.1 \rightarrow 136.1,190.1 \rightarrow 163.0$ |
| Trifloxystrobin | 15.3 | $409.0 \rightarrow 186.0,409.0 \rightarrow 206.0$ |
| Triflumizole | 15.3 | $346.0 \rightarrow 278.0,346.0 \rightarrow 73.0$ |
| Triflumuron | 14.6 | $359.1 \rightarrow 156.2,359.1 \rightarrow 139.0$ |
| Triforin | 10.6 | $435.0 \rightarrow 390.0,437.0 \rightarrow 392.0$ |
| Triticonazole A | 12.7 | $318.0 \rightarrow 70.0,318.0 \rightarrow 125.0$ |
| Triticonazole B | 10.9 | $318.0 \rightarrow 70.0,318.0 \rightarrow 125.0$ |
| Vamidothion | 3.4 | $288.1 \rightarrow 146.0,288.1 \rightarrow 118.0$ |
| Zoxamide | 14.2 | $336.0 \rightarrow 187.0,338.0 \rightarrow 189.0$ |

## Avantor ${ }^{\circledR}$ ACE ${ }^{\circledR}$

