



FRSP 2011-2012

Quarterly Report

Quarter Three

Prepared by Food Assurance Programmes Team

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Summary

The Food Residue Surveillance Programme (FRSP) is an annual surveillance programme that has been run by Ministry for Primary Industries (MPI), formerly MAF and NZFSA, since 2003. The programme assesses the effectiveness of current controls of chemical residues on imported and locally-produced foods.

Residue levels found in two samples of olive oil, taking into account processing factors and measurement uncertainty, indicate that it is likely the raw olives would have breached the NZ default MRL for difenoconazole. Non-compliant residues could suggest that good agricultural practice (GAP) has not been complied with but none of these non-compliances posed a risk to human health. MPI will be following up on this issue.

Residues found in one walnut sample indicate it may breach the NZ default MRL for dithiocarbamates. Also three samples of organic walnuts were also found to contain the residue that is indicative of the presence of dithiocarbamates. The cause of these findings is uncertain as this residue found is also found to be generated by some naturally occurring chemicals in plants so it will be difficult to ascertain whether the levels detected were result of agricultural chemical use.

Introduction

The Food Residue Surveillance Programme (FRSP) is an annual surveillance programme that has been run by MPI, formerly MAF and NZFSA, since 2003. The programme assesses the effectiveness of current controls of chemical residues on imported and locally-produced foods.

Results will be reported after each quarter of testing. Previously results were released in a spreadsheet format. This year MPI is releasing the results in report format. These quarterly reports will not provide an extensive analysis of results. A more comprehensive report analysing the results will be released at the end of the annual testing period (around August 2012).

FRSP 2011 is sampling and testing twelve food commodities during May 2011 through to April 2012. The products tested in quarter three include walnuts and olive oil.

This report details the results received for quarter three, encompassing samples taken during November, December 2011 and January 2012.

Products tested during quarter three

SAMPLING

MPI collected the samples.

METHODOLOGY

Two techniques were used to analyse the samples for pesticides, they were:

- Gas chromatography –mass spectrometry (GC-MS/MS)
- Liquid chromatography – tandem mass spectrometry (LC-MS/MS)

Dithiocarbamates were also being tested for (as carbon disulphide) using GC-MS/MS.

For fruit and vegetables the GC-MS/MS multi-residue screening method was able to detect residues of 265 pesticides, with 352 pesticides being detectable in the LC-MS/MS multi-residue method (some of these also being in the GC-MS/MS suite).

For vegetable oils the GC-MS/MS multi-residue screening method was able to detect residues of 255 pesticides, with 352 pesticides being detectable in the LC-MS/MS multi-residue method (some of these also being in the GC-MS/MS suite).

A list of all pesticides being tested for can be found in appendix 1.

Results

In this period walnuts and olive oil were tested. Further testing of olive oil will occur later in the sampling year.

Table 1 shows a summary of the samples collected in quarter three

Table 1: Quarter 3 Samples Taken

| Product | Total Samples Collected | Total Samples specified during reporting period | Carry over | Total Number of residue detections |
|----------------------------------|-------------------------|---|------------|------------------------------------|
| Olive Oil (Domestic/Imported) | 24 | 24 | | 22 |
| Walnuts (Domestic/Imported) | 24 | 24 | | 9 |
| Table Totals | 48 | 48 | | 31 |

DETECTIONS (PESTICIDES)

Table 2: Detections in Walnuts

| Sample # | Results (mg/kg) | Maximum Residue Limit (MRL) | Pesticide | Methodology |
|----------|--------------------|--------------------------------|------------------|-------------|
| FRSP394 | 0.044 | 0.1mg/kg (default NZ limit) | Dithiocarbamates | GC-MS |
| FRSP399 | 0.057 | 0.1mg/kg (default NZ limit) | Dithiocarbamates | GC-MS |
| FRSP400 | 0.052 | 0.1mg/kg (default NZ limit) | Dithiocarbamates | GC-MS |
| FRSP402 | 0.024 | 0.1mg/kg (default NZ limit) | Dithiocarbamates | GC-MS |
| FRSP403 | 0.043 | 0.1mg/kg (default NZ limit) | Dithiocarbamates | GC-MS |
| FRSP411 | 0.055 | 0.1mg/kg (default NZ limit) | Dithiocarbamates | GC-MS |
| FRSP412 | 0.15 | 0.1mg/kg (default NZ limit) | Dithiocarbamates | GC-MS |
| FRSP420 | 0.047 | 0.1mg/kg (default NZ limit) | Dithiocarbamates | GC-MS |
| FRSP421 | 0.062 | 0.1mg/kg (default NZ limit) | Dithiocarbamates | GC-MS |

Residues found in one walnut sample (highlighted in table), indicates it may breach the NZ default MRL for dithiocarbamates (see comment in conclusion).

Note: Samples FRSP394, FRSP399 and FRSP400 were collected as organic samples of walnuts

Note: Non compliances with the MRL are taken to exist when the reported value together with the measurement uncertainty exceeds the MRL

Table 2: Detections in Olive Oil

| Sample # | Results (mg/kg) | Maximum Residue Limit (MRL) ** | Pesticide | Methodology |
|----------|--------------------|-----------------------------------|----------------|-------------|
| FRSP375 | 0.045 | 0.5 mg/kg (NZ) | Oxyfluorfen | GC-MS |
| FRSP377 | 0.34 | 0.4 mg/kg (NZ) | Azoxystrobin | LCMSMS |
| FRSP377 | 0.37 | 0.4 mg/kg (NZ) | Azoxystrobin | GC-MS |
| FRSP378 | 0.49 | 0.14 mg/kg (NZ) | Difenoconazole | LCMSMS |
| FRSP378 | 0.34 | 0.14 mg/kg (NZ) | Difenoconazole | GC-MS |
| FRSP395 | 0.02 | 0.5mg/kg(NZ) | Oxyfluorfen | GC-MS |
| FRSP396 | 0.039 | 0.4mg/kg(NZ) | Azoxystrobin | LCMSMS |
| FRSP396 | 0.034 | 0.4mg/kg(NZ) | Azoxystrobin | GC-MS |
| FRSP397 | 0.069 | 0.5mg/kg(NZ) | Oxyfluorfen | GC-MS |
| FRSP398 | 0.045 | 0.4mg/kg(NZ) | Azoxystrobin | LCMSMS |
| FRSP398 | 0.044 | 0.4mg/kg(NZ) | Azoxystrobin | GC-MS |
| FRSP401 | 0.45* | 0.4mg/kg(NZ) | Azoxystrobin | LCMSMS |
| FRSP401 | 0.42* | 0.4mg/kg(NZ) | Azoxystrobin | GC-MS |
| FRSP404 | 0.034 | 0.14 mg/kg (NZ) | Difenoconazole | LCMSMS |
| FRSP404 | 0.029 | 0.14 mg/kg (NZ) | Difenoconazole | GC-MS |
| FRSP408 | 0.42 | 0.14mg/kg(NZ) | Difenoconazole | LCMSMS |
| FRSP408 | 0.22 | 0.14mg/kg(NZ) | Difenoconazole | GC-MS |
| FRSP409 | 0.01 | 0.5mg/kg(NZ) | Oxyfluorfen | GC-MS |
| FRSP416 | 0.047 | 0.4mg/kg(NZ) | Azoxystrobin | LCMSMS |
| FRSP416 | 0.033 | 0.4mg/kg(NZ) | Azoxystrobin | GC-MS |
| FRSP417 | 0.16 | 0.4mg/kg(NZ) | Azoxystrobin | LCMSMS |
| FRSP417 | 0.15 | 0.4mg/kg(NZ) | Azoxystrobin | GC-MS |

** This is equal to the NZ default MRL multiply by the processing factor.

Note: Residue levels found in 2 samples of olive oil (highlighted in table), taking into account processing factors and measurement uncertainty, indicate that it is likely the raw olives would have breached the NZ default MRL (FRSP378 and FRSP408).

**Note:* Non compliances with the MRL are taken to exist when the reported value together with the measurement uncertainty exceeds the MRL

Conclusion

Residue levels found in two samples of olive oil, taking into account processing factors and measurement uncertainty, indicate that it is likely the raw olives would have breached the NZ default MRL for difenoconazole. Non-compliant residues could suggest that good agricultural practice (GAP) has not been complied with but none of these non-compliances posed a risk to human health. MPI will be following up on this issue.

Residues found in one walnut sample indicate it may breach the NZ default MRL for dithiocarbamates. Also three samples of organic walnuts were also found to contain the residue that is indicative of the presence of dithiocarbamates. The cause of these findings is uncertain as this residue found is also found to be generated by some naturally occurring chemicals in plants so it will be difficult to ascertain whether the levels detected were result of agricultural chemical use.

Appendix 1: Pesticides tested in FRSP 2011

| <i>Pesticides by GC-MS</i> | <i>Fruit and Vegetables*</i> | | |
|----------------------------|------------------------------|--------------------|-----------------------|
| Units | mg/kg | | |
| Compound | Compound | Compound | Compound |
| Acetochlor | DDT (p,p') | Flumiclorac pentyl | Pirimicarb |
| Alachlor | Deltamethrin | Flumioxazin | Pirimiphos-methyl |
| Aldrin | Demeton-s-methyl | Fluquinconazole | Pretilachlor |
| Allidochlor | Diazinon | Flusilazole | Prochloraz |
| Ametryn | Dichlobenil | Flutolanil | Procymidone |
| Anilofos | Dichlofenthion | Flutriafol | Profenofos |
| Atrazine | Dichlofluanid | Fluvalinate | Promecarb |
| Azaconazole | Dichloran | Fonofos | Prometryn |
| Azinphos-methyl | Dicofol | Fosthiazate | Propachlor |
| Azoxystrobin | Dichlorvos | Furalaxy | Propargite |
| Benalaxyl | Diclobutrazol | Furathiocarb | Propazine |
| Bendiocarb | Diclofop-methyl | Haloxyfop-etotyl | Propetamphos |
| Benfluralin | Dicrotophos | Haloxyfop-methyl | Propham |
| Benodanil | Dieldrin | Heptachlor | Propiconazole |
| Benoxacor | Diethofencarb | Heptachlor epoxide | Propoxur |
| BHC (alpha) | Difenoconazole | Heptenophos | Propyzamide |
| BHC (beta) | Diflufenican | Hexachlorobenzene | Prothiofos |
| BHC (delta) | Dimepiperate | Hexaconazole | Pyraclostrobin |
| Bifenox | Dimethenamid | Hexazinone | Pyraflufen ethyl |
| Bifenthrin | Dimethoate | Indoxacarb | Pyrazophos |
| Bioresmethrin | Dimethomorph | Iodofenphos | Pyributicarb |
| Bitertanol | Dimethylvinphos | Iprobefos | Pyridaben |
| Bromacil | Dioxabenzofos | Iprodione | Pyridafenthion |
| Bromobutide | Diphenamid | Iprovalicarb | Pyrimethanil |
| Bromophos-ethyl | Diphenylamine | Isazophos | Pyrimidifen |
| Bromophos | Disulfoton | Isofenphos | Pyriminobac-methyl(E) |
| Bromopropylate | Dithiopyr | Isoprocarb | Pyriminobac-methyl(Z) |
| Bupirimate | Edifenphos | Isoprothiolane | Pyriproxyfen |
| Buprofezin | Endosulfan sulphate | Kresoxim-methyl | Quinalphos |
| Butachlor | Endosulfan (alpha) | Lactofen | Quinoclamine |
| Butafenacil | Endosulfan (beta) | Leptophos | Quinoxifen |
| Butamifos | Endrin | Lindane | Quintozen |
| Cadusafos | EPN | Linuron | Quizalofop-ethyl |
| Captan [#] | Epoxiconazole | Malathion | Simazine |
| Carbaryl | EPTC | Mepronil | Simeconazole |

| <i>Pesticides by GC-MS</i> | <i>Fruit and Vegetables*</i> | | |
|----------------------------|------------------------------|------------------------|-------------------|
| Carbofuran | Esfenvalerate | Metalaxy | Simetryn |
| Carboxin | Esprocarb | Methacrifos | Sulfentrazone |
| Carfentrazone-ethyl | Ethalfluralin | Methidathion | Tebuconazole |
| Chlorfenapyr | Ethiofencarb | Methiocarb | Tebufenpyrad |
| Chlordane (cis) | Ethion | Metolachlor | Tecnazene |
| Chlordane (trans) | Ethopropos | Metribuzin | Tefluthrin |
| Chlorfenvinphos | Ethoxyquin | Mevinphos | Terbacil |
| Chlorobenzilate | Etoxazole | Molinate | Terbufos |
| Chlorothalonil | Etridiazole | Myclobutanil | Terbutylazine |
| Chlorpropham | Etrimfos | Napropamide | Terbutryn |
| Chlorpyrifos | Famphur | Nitrofen | Tetrachlorvinphos |
| Chlorpyrifos-methyl | Fenarimol | Nitrothal-isopropyl | Tetraconazole |
| Chlozolinate | Fenamiphos | Norflurazon | Tetradifon |
| Chlorthal-dimethyl | Fenchlorphos | Oxadiazon | Thenylchlor |
| Clodinafop-propargyl | Fenitrothion | Oxadixyl | Thiobencarb |
| Clomazone | Fenobucarb | Oxyfluorfen | Thiometon |
| Cloquintocet-mexyl | Fenoxyanil | Paclbutrazol | Tolclofos-methyl |
| Coumafos | Fenoxaprop-ethyl | Parathion | Tolylfluanid |
| Cyanazine | Fenoxy carb | Parathion-methyl | Tralkoxydim |
| Cyanophos | Fenpiclonil | Penconazole | Triadimefon |
| Cyflufenamid | Fenpropothrin | Pendimethalin | Triadimenol |
| Cyfluthrin | Fenpropimorph | Permethrin (cis,trans) | Triallate |
| Cyhalofop-butyl | Fensulfothion | Phenthionate | Tribuphos |
| Cyhalothrin | Fenthion | Phorate | Triazophos |
| Cypermethrin | Fenvalerate | Phorate sulphone | Trifloxystrobin |
| Cyproconazole | Fipronil | Phorate sulphoxide | Trifluralin |
| Cyprodinil | Flamprop-methyl | Phosalone | Uniconazole P |
| DDD (o,p') | Fluacrypyrim | Phosmet | Vinclozolin |
| DDD (p,p') | Fluazifop-p-butyl | Phosphamidon | XMC |
| DDE (o,p') | Fluazinam | Picolinafen | |
| DDE (p,p') | Flucythrinate | Piperonyl butoxide | |
| DDT (o,p') | Fludioxonil | Piperophos | |

#Note: Captan analysed by gas chromatography with electron capture detection.

***Note:** Results are reported on an as received basis. Additionally some pesticides may not be recoverable from all product types should that product prove intractable during analysis.

| <i>Pesticides by GC-MS</i> | | <i>Vegetable Oils</i> | |
|----------------------------|---------------------|-----------------------|-----------------------|
| Units | | mg/kg | |
| Compound | Compound | Compound | Compound |
| Acetochlor | DDT (p,p') | Flucythrinate | Piperonyl butoxide |
| Alachlor | Deltamethrin | Flumiclorac pentyl | Piperophos |
| Aldrin | Demeton-s-methyl | Flumioxazin | Pirimicarb |
| Alliodochlor | Diazinon | Fluquinconazole | Pirimiphos-methyl |
| Ametryn | Dichlobenil | Flusilazole | Pretilachlor |
| Anilofos | Dichlofenthion | Flutolanil | Prochloraz |
| Atrazine | Dichlofluanid | Flutriafol | Procymidone |
| Azaconazole | Dichloran | Fluvalinate | Profenofos |
| Azinphos-methyl | Dicofol | Fonofos | Promecarb |
| Azoxystrobin | Dichlorvos | Furalaxy | Prometryn |
| Benalaxyl | Diclobutrazol | Furathiocarb | Propachlor |
| Bendiocarb | Diclofop-methyl | Haloxyfop-etotyl | Propargite |
| Benfluralin | Dicrotophos | Haloxyfop-methyl | Propazine |
| Benodanil | Dieldrin | Heptachlor | Propetamphos |
| Benoxacor | Diethofencarb | Heptachlor epoxide | Propham |
| BHC (alpha) | Difenoconazole | Heptenophos | Propiconazole |
| BHC (beta) | Diflufenican | Hexachlorobenzene | Propoxur |
| BHC (delta) | Dimepiperate | Hexaconazole | Propyzamide |
| Bifenox | Dimethenamid | Hexazinone | Prothiofos |
| Bifenthrin | Dimethoate | Indoxacarb | Pyraclostrobin |
| Bitertanol | Dimethomorph | Iodofenphos | Pyraflufen ethyl |
| Bromacil | Dimethylvinphos | Iprobenfos | Pyrazophos |
| Bromobutide | Dioxabenzofos | Iprodione | Pyributicarb |
| Bromophos-ethyl | Diphenamid | Iprovalicarb | Pyridaben |
| Bromophos | Diphenylamine | Isazophos | Pyridafenthion |
| Bromopropylate | Disulfoton | Isofenphos | Pyrimethanil |
| Bupirimate | Dithiopyr | Isoprocarb | Pyrimidifen |
| Buprofezin | Edifenphos | Isoprothiolane | Pyriminobac-methyl(E) |
| Butachlor | Endosulfan sulphate | Kresoxim-methyl | Pyriminobac-methyl(Z) |
| Butafenacil | Endosulfan (alpha) | Lactofen | Pyriproxyfen |
| Butamifos | Endosulfan (beta) | Leptophos | Quinalphos |
| Cadusafos | Endrin | Lindane | Quinoxifen |
| Carbaryl | EPN | Linuron | Quintozene |
| Carbofuran | Epoxiconazole | Malathion | Quizalofop-ethyl |
| Carfentrazone-ethyl | EPTC | Mepronil | Simazine |
| Chlorfenapyr | Esfenvalerate | Metalaxyl | Simeconazole |

| <i>Pesticides by GC-MS</i> | | <i>Vegetable Oils</i> | |
|----------------------------|-------------------|------------------------|-------------------|
| Chlordane (cis) | Esprocarb | Methacrifos | Simetryn |
| Chlordane (trans) | Ethalfluralin | Methidathion | Sulfentrazone |
| Chlorfenvinphos | Ethiofencarb | Methiocarb | Tebuconazole |
| Chlorobenzilate | Ethion | Metolachlor | Tebufenpyrad |
| Chlorothalonil | Ethopropos | Metribuzin | Tecnazene |
| Chlorpropham | Etoxazole | Mevinphos | Tefluthrin |
| Chlorpyrifos | Etridiazole | Molinate | Terbacil |
| Chlorpyrifos-methyl | Etrimfos | Myclobutanil | Terbufos |
| Chlozolinate | Famphur | Napropamide | Terbutylazine |
| Chlorthal-dimethyl | Fenarimol | Nitrofen | Terbutryn |
| Clodinafop-propargyl | Fenamiphos | Nitrothal-isopropyl | Tetrachlorvinphos |
| Clomazone | Fenchlorphos | Norflurazon | Tetraconazole |
| Cloquintocet-mexyl | Fenitrothion | Oxadiazon | Tetradifon |
| Coumafos | Fenobucarb | Oxadixyl | Thenylchlor |
| Cyanazine | Fenoxanil | Oxyfluorfen | Thiobencarb |
| Cyanophos | Fenoxyprop-ethyl | Paclbutrazol | Thiometon |
| Cyflufenamid | Fenoxy carb | Parathion | Tolclofos-methyl |
| Cyfluthrin | Fenpiclonil | Parathion-methyl | Tolyfluanid |
| Cyhalofop-butyl | Fenpropothrin | Penconazole | Tralkoxydim |
| Cyhalothrin | Fenpropimorph | Pendimethalin | Triadimefon |
| Cypermethrin | Fensulfothion | Permethrin (cis,trans) | Triadimenol |
| Cyproconazole | Fenthion | Phenthroate | Triallate |
| Cyprodinil | Fenvalerate | Phorate | Tribuphos |
| DDD (o,p') | Fipronil | Phorate sulphone | Triazophos |
| DDD (p,p') | Flamprop-methyl | Phosalone | Trifloxystrobin |
| DDE (o,p') | Fluacrypyrim | Phosmet | Trifluralin |
| DDE (p,p') | Fluazifop-p-butyl | Phosphamidon | Vinclozolin |
| DDT (o,p') | Fluazinam | Picolinafen | |

| <i>Pesticides by LC-MS/MS (Extended)</i> | <i>Fruit , Vegetables and Oils*</i> | | |
|--|-------------------------------------|-----------------------|-----------------------|
| Units | mg/kg | | |
| Abamectin | Dicrotophos | Hexaconazole | Propachlor |
| Acephate | Diethofencarb | Hexaflumuron | Propamocarb |
| Acetamiprid | Difenconazole | Hexazinone | Propanil |
| Acetochlor | Diflubenzuron | Hexythiazox | Propaphos |
| Acibenzolar-S-methyl | Diflufenican | Imazalil | Propaquizafop |
| Acifluorfen | Dimepiperate | Imazamethabenz-methyl | Propargite |
| Alachlor | Dimethenamid | Imazosulfuron | Propazine |
| Alanycarb | Dimethoate | Imidacloprid | Propham |
| Aldicarb | Dimethomorph | Inabenfide | Propiconazole |
| Aldicarb-sulfone | Dimethylvinphos | Indanofan | Propoxur |
| Aldicarb-sulfoxide | Dioxathion | Indoxacarb | Propyzamide |
| Allidochlor | Diphenamid | Iodofenphos | Prosulfocarb |
| Ametryn | Disulfoton | Iodosulfuron-methyl | Pymetrozine |
| Anilofos | Dithiopyr | Iprobenos | Pyraclostrobin |
| Atrazine | Diuron | Iprovalicarb | Pyrazophos |
| Azaconazole | Dodine | Isazophos | Pyributicarb |
| Azamethiphos | Edifenphos | Isofenphos | Pyridaben |
| Azinphos-methyl | Emamectin Benzoate | Isofenphos-methyl | Pyridafenthion |
| Azoxystrobin | Epoxiconazole | Isoprocarb | Pyrifenoxy |
| Benalaxyl | EPTC | Isoprothiolane | Pyriftalid |
| Bendiocarb | Esprocarb | Isoproturon | Pyrimethanil |
| Benfluralin | Ethalfluralin | Isoxathion | Pyrimidifen |
| Benfuracarb | Ethametsulfuron-methyl | Karbutilate | Pyriminobac-methyl(E) |
| Benodanil | Ethion | Lactofen | Pyriminobac-methyl(Z) |
| Benoxacor | Ethiprole | Lenacil | Pyriproxyfen |
| Bensulfuron-methyl | Ethopros | Linuron | Pyroquilon |
| Bensulide | Ethoxyquin | Lufenuron | Quinalphos |
| Bifenox | Ethoxysulfuron | Malathion | Quinoclamine |
| Bitertanol | Ethyloxyacetate | Mandipropamid | Quinoxifen |
| Boscalid | Etobenzanid | Mefenacet | Quizalofop-ethyl |
| Bromacil | Etoxazole | Mefenpyr-diethyl | Rimsulfuron |
| Bromobutide | Etrimfos | Mepanipyrim | Sethoxydim |
| Bupirimate | Famoxadone | Mepronil | Simazine |
| Buprofezin | Famphur | Metalaxyl | Simeconazole |
| Butachlor | Fenamidone | Metamitron | Simetryn |

| <i>Pesticides by LC-MS/MS (Extended)</i> | <i>Fruit , Vegetables and Oils*</i> | | |
|--|-------------------------------------|---------------------|-------------------------------|
| Butafenacil | Fenamifos | Metconazole | Spinetoram |
| Butamifos | Fenarimol | Methabenztiazuron | Spinosad |
| Cadusafos | Fenbuconazole | Methacrifos | Spiromesifen |
| Cafenstrole | Fenchlorphos | Methamidophos | Spiromesifen-enol |
| Carbaryl | Fenhexamid | Methidathion | Spirotetramat |
| Carbendazim | Fenobucarb | Methiocarb | Spiroxamine |
| Carbetamide | Fenothiocarb | Methomyl | Sulfentrazone |
| Carbofuran | Fenoxyanil | Methoxyfenozide | Sulprofos |
| Carfentrazone-ethyl | Fenoxaprop | Metobromuron | Tebuconazole |
| Carpropamid | Fenoxaprop-ethyl | Metolachlor | Tebufenozide |
| Chlorantraniliprole | Fenoxy carb | Metominostrobin (E) | Tebufenpyrad |
| Chlorbufam | Fenpiclonil | Metominostrobin (Z) | Tebuthiuron |
| Chlorfenvinphos | Fenpropathrin | Metosulam | Teflubenzuron |
| Chloridazon | Fenpropimorph | Metribuzin | Temephos |
| Chlorimuron-ethyl | Fenpyroximate | Mevinphos | Tepralaxydim |
| Chlorotoluron | Fensulfothion | Milbemectin | Terbufos |
| Chloroxuron | Fenthion | Molinate | Terbumeton |
| Chlorpropham | Fenthion sulfone | Monocrotophos | Terbutryn |
| Chlorpyrifos | Fenthion sulfoxide | Monolinuron | Terbutylazine |
| Chlorpyrifos-methyl | Fentrazamide | Myclobutanil | Tetrachlorvinphos |
| Chlorsulfuron | Ferimzone | Napropamide | Tetraconazole |
| Chromafenozone | Fipronil | Nicotine | Thenylchlor |
| Cinidon- ethyl | Flamprop | Norflurazon | Thiabendazole |
| Clethodim | Flamprop-methyl | Novaluron | Thiacloprid |
| Clodinafop-propargyl | Flazasulfuron | Omethoate | Thiamethoxam |
| Clofentezine | Fluacrypyrim | Oryzalin | Thiazopyr |
| Clomazone | Fluazifop-p-butyl | Oxabetrinil | Thidiazuron |
| Cloquintocet-mexyl | Fludioxonil | Oxadiazon | Thiobencarb |
| Clothianidin | Flufenacet | Oxadixyl | Thiocyclam hydrogenoxalate |
| Coumafos | Flumiclorac petyl | Oxamyl | Thiometon |
| Coumaphos oxon | Flumioxazin | Oxycarboxin | Tiadnil |
| Cyanazine | Fluometuron | Paclobutrazol | Tolclofos-methyl |
| Cyazofamid | Fluquinconazole | Penconazole | Tolyfluanid |
| Cyclanilide | Fluridone | Pencycuron | Tralkoxydim |
| Cycloate | Flusilazole | Pendimethalin | Triadimefon |
| Cyclosulfamuron | Flusulfamide | Phenmedipham | Triadimenol |
| Cyflufenamid | Fluthiacet-methyl | Phenthroate | Triallate |
| Cymoxanil | Flutolanil | Phorate | Triasulfuron |

| <i>Pesticides by LC-MS/MS (Extended)</i> | <i>Fruit , Vegetables and Oils*</i> | | |
|--|-------------------------------------|--------------------|-------------------------|
| Cyproconazole | Flutriafol | Phorate sulphone | Triazophos |
| Cyprodinil | Folpet | Phorate sulphoxide | Tribenuron-methyl |
| Cyromazine | Fomesafen | Phosalone | Tribuphos |
| Daimuron | Fonofos | Phosphamidon | Trichlorfon |
| Demeton-s-methyl | Forchlorfenuron | Phoxim | Tricyclazole |
| Demeton-s-methyl-sulfoxide | Formetanate hydrochloride | Picolinafen | Trifloxystrobin |
| Desmedipham | Fosthiazate | Piperonyl butoxide | Trifloxysulfuron sodium |
| Di-allate | Fuberidazole | Piperophos | Triflumizole |
| Diazinon | Furalaxyl | Pirimicarb | Triflumuron |
| Dichlofenthion | Furametpyr | Pirimiphos-methyl | Triflusulfuron-methyl |
| Dichlofluanid | Furathiocarb | Pretilachlor | Triforine |
| Diclobutrazol | Halosulfuron-methyl | Prochloraz | Uniconazole P |
| Diclocymet | Haloxyfop-etotyl | Profenofos | Vamidothion |
| Diclofop-methyl | Haloxyfop-methyl | Promecarb | XMC |
| Diclosulam | Heptenophos | Prometryn | Zoxamide |

*Note: Results are reported on an as received basis. Additionally some pesticides may not be recoverable from all product types should that product prove intractable during analysis.

| <i>Dithiocarbamates by GC-MS</i> |
|----------------------------------|
| Units mg/kg |
| Dithiocarbamates including: |
| Mancozeb (as carbon disulphide) |
| Maneb (as carbon disulphide) |
| Metam (as carbon disulphide) |
| Metham (as carbon disulphide) |
| Metiram (as carbon disulphide) |
| Propineb (as carbon disulphide) |
| Thiram (as carbon disulphide) |
| Zineb (as carbon disulphide) |
| Ziram (as carbon disulphide) |

*Note: Results are reported on an as received basis. Additionally some pesticides may not be recoverable from all product types should that product prove intractable during analysis.