



Third quarter analytical results for the 2016 New Zealand Total Diet Study

MPI Technical Paper No: 2016/68

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ISBN No: 978-1-77665-396-6 (online)
ISSN No: 2253-3923 (online)

October 2016

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1 Introduction

New Zealand Total Diet Studies are undertaken approximately every 5 years with the 2016 study being the eighth of its kind in New Zealand. Its primary focus is to assess exposure to chemical residues, contaminant elements and selected nutrients, from approximately 130 representative foods, across the average diet of different age-sex groups within the New Zealand population.

This report presents the test results from the third quarterly sampling period for the 2016 New Zealand Total Diet Study (NZTDS). Samples were purchased in Auckland, Napier, Christchurch and Dunedin over a five week period. Analysis and interpretation of the results has not occurred at this time.

A final comprehensive report including dietary exposure estimates for all specific population groups will be prepared once all data from the four quarterly sampling periods in 2016 have been consolidated. A full risk assessment of any possible risks to human health from overall exposure of consumers to chemicals in the food supply will also be undertaken. It is expected that this report will be published in December 2017.

2 Survey Design

2.1 SAMPLING

Regional foods are sampled in Quarter 1 and Quarter 3 with samples being purchased in Auckland, Napier, Christchurch and Dunedin over a five week period. National foods are sampled in Quarter 2 and 4 with samples being purchased in Christchurch over a six week period.

2.2 RETAIL OUTLETS

Wherever possible, the purchasing of any particular food is carried out over a range of retail outlets in order to represent typical buying habits of the community. Therefore the majority of purchases are made at supermarkets. However, convenience stores, delicatessens, butchers and green grocers are included where appropriate.

2.3 RANGE OF BRANDS / USE BY DATES / BATCH NUMBERS

The most commonly purchased brands, as based on consumer data, are sampled during the NZTDS. A range of use by dates and/or batch numbers within each brand are included to increase the range of products being sampled.

Where imported and domestic lines are available for a particular food, a mixture is selected.

2.4 SAMPLING - REGIONAL FOODS

Each regional food will be sampled twice throughout the year so that any seasonal variation can be captured.

Four samples of each regional food in each of the four geographical regions are purchased. This allows a greater range of retail outlets to be represented in the sampling.

This effectively results in a minimum of sixteen samples of each food being analysed. The four purchases from each geographical region are composited prior to analysis. The different regional samples are analysed individually for all applicable analytes.

2.5 SAMPLE PREPARATION

As the primary purpose of the NZTDS is to estimate dietary exposure to chemical residues, contaminant elements and selected nutrients, foods are analysed on an 'as consumed' basis (i.e. banana, peeled; meat, cooked etc.).

2.6 SAMPLE ANALYSIS

All analyses (agricultural compounds and elements), with the exception of inorganic arsenic, are carried out by R J Hill Laboratories Ltd, Hamilton, New Zealand.

Inorganic arsenic analysis (only in samples exceeding 0.02mg/kg total arsenic) is undertaken by the Cawthron Institute, Nelson, New Zealand as required.

2.7 ANALYTICAL QUALITY CONTROL

A range of quality control procedures are employed to provide confidence in the methodology and the validity of results. R J Hill Laboratories is an internationally accredited laboratory to ISO 17025, as such they maintain a range of internal quality controls including analysing samples in duplicate, spiked recoveries, internal standardisation and the use of Internationally Certified Reference Materials (CRMs).

In addition all results are scrutinised by an MPI expert and any unusual findings result in the samples being re-analysed. Transcription errors are avoided as the test results are directly and electronically transferred to the MPI database from the Laboratory Information Management System (LIMS).

3 Analyte List

3.1 ELEMENTS

Eleven elements and two speciated forms of elements are included for analysis in the 2016 NZTDS. Table 1 lists the elements, the analytical methodologies used and the foods which are analysed. It should be noted that Q3 involves analysis of regional foods only and that for some foods not all the elements are analysed (as indicated in the table below).

3.1.1.1 Table 1 - Elements and speciated forms of elements analysed in the 2016 NZTDS

Element	Method of analysis	Foods to be analysed
Aluminium (Al)	ICP-MS	All
Total Arsenic (As)	ICP-MS	All
Inorganic Arsenic (iAs)	HG-AAS	All foods with total arsenic levels above 0.02 mg/kg
Cadmium (Cd)	ICP-MS	All
Fluoride (F)	Ion selective electrode.	All plant based foods (except avocados and mixed plant/dairy foods) and beverages
Iodine (I)	ICP-MS	All
Lead (Pb)	ICP-MS	All

Total Mercury (Hg)	ICP-MS	All
Methylmercury (MeHg)	SPME-GCMS	Only seafood
Selenium (Se)	ICP-MS	All
Sodium (Na)	ICP-OES	All
Tin (Sn)	ICP-MS	All
Zinc (Zn)	ICP-MS	All

ICP-MS = Inductively-coupled plasma mass spectrometry

HG-AAS = Hydride generation-atomic absorption spectrometry

ICP-OES = Inductively-coupled plasma optical emission spectrometry

SPME GCMS – Solid phase micro extraction gas chromatography mass spectrometry

3.2 AGRICULTURAL COMPOUNDS

Testing of foods in the 2016 NZTDS for residues of agricultural compounds is undertaken by way of three separate screens. A multi-residue (MR) screen of 301 compounds that includes organochlorine pesticides, organophosphorus and carbamate pesticides, pyrethroids, fungicides and a number of other agricultural compounds not included in these groups. The MR screen also includes analysis of quaternary ammonium compounds that are used as agricultural compounds but are also commonly used as surface disinfectants.

Two separate screens are also undertaken in subgroupings of the foods:

The first is for carbon disulphide (CS₂) a common chemical marker for nine dithiocarbamate fungicides which is undertaken in all fruits, nuts and vegetables; and in fruit based beverages.

The second is a screen for twenty one phenoxy and aromatic acid herbicides which is undertaken in all cereal grains and vegetables and some vegetable based foods.

3.2.1 Multi-residue screen in the 2016 NZTDS

All foods are analysed for agricultural compound residues by the MR screen method. Table 2 lists the 301 agricultural compound analytes included in this screen.

3.2.1.1 Table 2 - Agricultural compound analytes in the 2016 NZTDS multi-residue screen

2,4' - DDD	Cyfluthrin	Fluvalinate	Procymidone
2,4' - DDE	Cyhalothrin	Fluxapyroxad	Profenofos
2,4' - DDT	Cypermethrin	Folpet	Prometryn
4,4' - DDD	Cyproconazole	Fonofos	Propachlor
4,4' - DDE	Cyprodinil	Furalaxyl	Propamocarb
4,4' - DDT	delta-BHC	Furathiocarb	Propanil
Abamectin	Deltamethrin (including Tralomethrin)	gamma-BHC (Lindane)	Propaphos
Acephate	Demeton-S-methyl	Halfenprox	Propargite
Acetamiprid	Diazinon	Haloxypop-methyl	Propazine

Acetochlor	Dichlobenil	Heptachlor	Propetamphos
Acrinathrin	Dichlofenthion	Heptachlor epoxide	Propham
Alachlor	Dichlofluamid	Hexachlorobenzene	Propiconazole
Aldicarb	Dichloran	Hexaconazole	Propoxur
Aldicarb sulfone	Dichlorvos	Hexazinone	Propyzamide
Aldicarb sulfoxide	Dicofol	Hexythiazox	Prothiofos
Aldrin	Dicrotophos	Imazalil	Pyraclufos
alpha-BHC	Didecyldimethylammonium chloride (DDAC)	Imidacloprid	Pyraclostrobin
Ametryn	Dieldrin	Indoxacarb	Pyrazophos
Anilazine	Diethofencarb	Iodofenphos	Pyrazoxyfen
Atrazine	Difenoconazole	Iprobenfos	Pyrethrin
Atrazine - desethyl	Diflubenzuron	Iprodione	Pyridaphenthion
Atrazine - desisopropyl	Diflufenican	Isazophos	Pyrifenox
Azaconazole	Dimethenamid	Isofenphos	Pyrimethanil
Azinphos-methyl	Dimethoate	Isoprocarb	Pyriproxyfen
Azoxystrobin	Dimethylvinphos	Kresoxim-methyl	Quinalphos
Benalaxyl	Dimthomorph	Leptophos	Quintozene
Bendiocarb	Dioxabenzofos	Linuron	Quizalofop-ethyl
Benodanil	Diphenylamine	Lufenuron	Sethoxydim
Benoxacor	Disulfoton	Malathion	Simazine
Benzalkonium Chloride (C12)	Diuron	Mepronil	Simetryn
Benzalkonium Chloride (C14)	Dodine	Metalaxyl (Mefenoxam)	Spinetoram
Benzalkonium Chloride (C16)	Edifenphos	Metconazole	Spinosad
Beta-BHC	Emamectin	Methabenzthiazuron	Spiromesifen
Bifenox	Empenthrin	Methacrifos	Spirotetramat
Bifenthrin	Endosulfan I	Methamidophos	Spirotetramat-cis-enol
Bitertanol	Endosulfan II	Methidathion	Spirotetramat-cis-keto-hydroxy
Bixafen	Endosulfan sulfate	Methiocarb	Spirotetramat-enol-glucoside

Boscalid	Endrin	Methomyl	Spirotetramat-mono-hydroxy
Bromacil	Endrin aldehyde	Methoxychlor	Sulfentrazone
Bromophos-ethyl	Endrin ketone	Methoxyfenozide	Sulfotep
Bromopropylate	EPN	Metolachlor	Sulfoxaflor
Bupirimate	Epoxiconazole	Metribuzin	Tebuconazole
Buprofezin	EPTC	Mevinphos	Tebufenozide
Butachlor	Esprocarb	Milbemectin	Tebufenpyrad
Butamifos	Ethion	Molinate	Teflubenzuron
Cadusafos	Ethoprophos	Monocrotophos	Tefluthrin
Captafol	Etoxazole	Myclobutanil	Terbacil
Captan	Etridiazole	Naled	Terbufos
Carbaryl	Etrimfos	Napropamide	Terbumeton
Carbendazim (incl. Benomyl and Thiophanate)	Famphur	Nitrofen	Terbutylazine
Carbofenthiol	Fenamiphos	Nitrothal-isopropyl	Terbutylazine-desethyl
Carbofuran	Fenarimol	Norflurazon	Terbutryn
Carboxin	Fenchlorphos	Omethoate	Tetrachlorvinphos
Carfentrazone-ethyl	Fenhexamid	Oryzalin	Tetraconazole
Chlorantraniliprole	Fenitrothion	Oxadiazon	Tetradifon
Chlorfenapyr	Fenobucarb	Oxadixyl	Thenylchlor
Chlorfenvinphos	Fenoxaprop-ethyl	Oxamyl	Thiacloprid
Chlorfluazuron	Fenoxycarb	Oxychlordane	Thiamethoxam
Chloridazon	Fenpiclonil	Oxyfluorfen	Thifluzamide
Chlorobenzilate	Fenpropathrin	Paclobutrazol	Thiobencarb
Chlorothalonil	Fenpropimorph	Parathion-ethyl	Thiometon
Chlorpropham	Fenpyroximate	Parathion-methyl	Thiophanate-methyl
Chlorpyrifos	Fensulfotthion	Penconazole	Tolclofos-methyl
Chlorpyrifos-methyl	Fenthion	Pencycuron	Tolyfluanid
Chlorthal-dimethyl	Fenvalerate (including Esfenvalerate)	Pendimethalin	Trans-chlordane

Chlortoluron	Fipronil	Permethrin	Triadimefon
Chlozolinate	Fluazifop-butyl	Phenthoate	Triadimenol
cis-Chlordane	Flucythrinate	Phorate	Tri-allate
Clethodim	Fludioxonil	Phosalone	Triazophos
Clofentezine	Flufenoxuron	Phosmet	Trichlorfon
Clomazone	Flumioxazin	Phosphamidon	Trifloxystrobin
Coumaphos	Fluometuron	Piperonyl-butoxide	Triflumuron
Cyanazine	Flusilazole	Pirimicarb	Trifluralin
Cyanophos	Flutolanil	Pirimiphos-methyl	Uniconazole
Cyantraniliprole	Flutriafol	Prochloraz	Vinclozolin
Cyflufenamid			

3.2.2 Carbon disulphide (CS₂) screen in the 2016 NZTDS

A separate screen is run for carbon disulphide (CS₂) in fruits, nuts and vegetables. This analysis is for a common chemical marker for the nine dithiocarbamate fungicides listed in table 3. The screen however is unable to distinguish between the nine chemicals and may also show false positives from natural sulphur containing compounds present in some plants (such as in brassica vegetables):

3.2.2.1 Table 3 – Dithiocarbamate fungicides detected in the CS₂ residue screen in the 2016 NZTDS

Ferbam	Metiram	Thiram
Mancozeb	Nabam	Zineb
Maneb	Propineb	Ziram

3.2.3 Herbicide screen in the 2016 NZTDS

A phenoxy acid and aromatic acid herbicide screen is run for all cereal grains and vegetables. This analysis covers the twenty one herbicides in table 4.

3.2.3.1 Table 4 – Phenoxy and aromatic acid herbicides analysed in the 2016 NZTDS

Acibenzolar acid	Dichloroprop	Mecoprop
Aminopyralid	Fluazifop	1-Naphthylacetic acid (NAA)
Bentazone	Fluoxypyr	Picloram
4-Chlorophenoxyacetic acid (4-CPA)	Haloxyfop	Quizalofop
Clopyralid	loxylinil	2,4,5-Trichlorophenoxyacetic acid (2,4,5-T)

Dicamba	MCPA	2,4,5-Trichlorophenoxypropionic acid (2,4,5-TP)
2,4 Dichlorophenoxyacetic acid (2,4-D)	MCPB	Triclopyr

4 Analytical Results

4.1 ELEMENTS

For the elements and speciated forms of elements analysed, results are reported per analyte for all foods analysed in this quarter.

All elemental results reported are on a 'foods as consumed' basis.

Elements are naturally occurring and ubiquitous in our environment. As such, if the concentration of a certain element in a food is 'not quantified' it is highly likely that it is present, but at levels less than the limit of quantification. In this report, 'not quantified' test results in the following tables are designated as a value of '<LOQ' using the associated limit of quantification given for each element. This can vary dependent on analyte and food matrix type (dry/fatty, fresh, liquid, water).

The tables do not include entries where samples were 'not analysed' for a particular food/analyte combination.

4.1.1 Aluminium

4.1.1.1 Table 5 - Aluminium content (mg/kg) of foods in Q3 of 2016 NZTDS, reported to one decimal place except for tap water

Food	Auckland	Christchurch	Dunedin	Napier
Apple	<0.2	<0.2	<0.2	<0.2
Avocado	<1.0	<1.0	<1.0	<1.0
Bacon	0.3	0.3	0.2	<0.2
Beef, mince	0.2	0.2	0.2	0.3
Beef, rump	0.3	0.4	0.2	0.2
Bread, mixed grain	1.0	<1.0	<1.0	1.1
Bread, wheatmeal	1.7	<1.0	1.0	1.2
Bread, white	1.6	<1.0	1.1	1.0
Broccoli/Cauliflower	0.8	<0.2	0.2	0.2
Butter	<1.0	<1.0	<1.0	<1.0
Cabbage	<0.2	0.3	<0.2	0.3
Cakes and slices	321.2	237.2	119.5	238.9
Capsicum	<0.2	<0.2	0.7	<0.2
Carrots	<0.2	<0.2	<0.2	<0.2
Celery	<0.2	0.6	0.2	0.2
Chicken takeaway	48.1	2.2	24.8	2.7
Coffee beans, ground	<0.1	<0.1	<0.1	<0.1
Corned beef	0.5	0.4	0.3	0.4
Courgette (Zucchini)	0.2	<0.2	<0.2	0.3
Cucumber	<0.2	<0.2	<0.2	<0.2
Eggs	<0.2	<0.2	<0.2	<0.2
Fish, battered	52.4	9.4	123.9	61.7

Food	Auckland	Christchurch	Dunedin	Napier
Fish, fresh	<0.2	<0.2	<0.2	<0.2
Grapes	1.3	1.3	1.0	1.8
Ham	1.7	3.1	4.8	0.3
Hamburger, plain	13.8	5.1	3.4	0.8
Kiwifruit	2.2	2.4	3.0	2.0
Kumara	0.4	0.3	<0.2	0.2
Lamb/mutton	<0.2	<0.2	<0.2	<0.2
Lambs liver	0.6	0.4	0.9	3.1
Lettuce	0.7	2.0	<0.2	<0.2
Mandarins	<0.2	<0.2	<0.2	<0.2
Meat pie	0.4	0.4	0.6	2.0
Melon	0.2	<0.2	<0.2	<0.2
Milk, 0.5% fat (Trim)	<0.1	<0.1	<0.1	<0.1
Milk, 3.25% fat	<0.1	<0.1	<0.1	<0.1
Milk, flavoured	0.4	0.9	0.7	0.7
Muffins and scones	783.4	926.7	724.3	536.5
Mushrooms	0.4	0.3	<0.2	0.8
Mussels	81.2	89.1	53.0	54.6
Nectarines	0.2	<0.2	<0.2	<0.2
Noodle dish	0.6	0.7	10.3	0.6
Onions	<0.2	<0.2	<0.2	0.5
Oranges	<0.2	<0.2	<0.2	<0.2
Oysters	12.0	30.4	23.3	44.8
Pear	<0.2	<0.2	0.2	0.3
Pizza	24.1	1.1	2.9	1.5
Pork roast	<0.2	<0.2	<0.2	<0.2
Potato, hot chips	0.3	<0.2	<0.2	0.2
Potatoes with skin	2.7	0.4	1.0	4.1
Potatoes, peeled	0.7	<0.2	<0.2	0.8
Pumpkin	<0.2	<0.2	<0.2	0.3
Rice dish	0.6	0.8	2.1	4.1
Sausages	0.9	0.8	0.9	1.0
Silverbeet	26.5	5.3	1.3	3.4
Strawberries	<0.2	0.4	0.3	0.4
Sushi	0.5	0.4	0.7	0.7
Tofu	1.8	1.4	1.3	1.5
Tomato	<0.2	<0.2	<0.2	<0.2
Water, tap	0.017	0.005	0.016	<0.003

4.1.2 Arsenic (Total and Inorganic)

4.1.2.1 Table 6 - Total Arsenic content (mg/kg) of foods in Q3 of 2016 NZTDS, reported to three decimal places

Food	Auckland	Christchurch	Dunedin	Napier
Apple	0.003	0.002	0.003	<0.002
Avocado	<0.009	<0.010	<0.010	<0.010
Bacon	<0.002	0.004	<0.002	<0.002
Beef, mince	0.005	0.006	0.004	0.005

Food	Auckland	Christchurch	Dunedin	Napier
Beef, rump	0.005	0.008	0.006	0.009
Bread, mixed grain	<0.010	<0.010	<0.010	<0.010
Bread, wheatmeal	<0.010	<0.010	<0.010	<0.010
Bread, white	<0.010	<0.010	<0.010	<0.010
Broccoli/Cauliflower	<0.002	<0.002	<0.002	<0.002
Butter	<0.010	<0.010	<0.010	<0.010
Cabbage	<0.002	<0.002	<0.002	<0.002
Cakes and slices	<0.010	<0.010	<0.010	<0.010
Capsicum	<0.002	<0.002	<0.002	<0.002
Carrots	<0.002	<0.002	<0.002	<0.002
Celery	<0.002	<0.002	<0.002	<0.002
Chicken takeaway	<0.010	0.010	<0.010	0.011
Coffee beans, ground	<0.001	<0.001	<0.001	<0.001
Corned beef	0.003	0.003	0.002	0.003
Courgette (Zucchini)	<0.002	<0.002	<0.002	<0.002
Cucumber	0.004	<0.002	0.002	<0.002
Eggs	0.009	0.011	0.009	0.009
Fish, battered	3.451*	0.784*	2.240*	0.940*
Fish, fresh	1.734*	2.078*	2.513*	2.497*
Grapes	0.005	0.003	0.005	0.002
Ham	<0.002	0.003	0.002	0.003
Hamburger, plain	0.005	0.005	0.006	0.006
Kiwifruit	<0.002	<0.002	<0.002	<0.002
Kumara	<0.002	<0.002	<0.002	0.002
Lamb/mutton	<0.010	<0.009	<0.009	<0.010
Lambs liver	0.008	0.005	0.012	0.003
Lettuce	<0.002	<0.002	<0.002	<0.002
Mandarins	<0.002	<0.002	<0.002	<0.002
Meat pie	0.005	0.007	0.003	0.005
Melon	<0.002	<0.002	<0.002	<0.002
Milk, 0.5% fat (Trim)	<0.001	<0.001	<0.001	<0.001
Milk, 3.25% fat	<0.001	<0.001	<0.001	<0.001
Milk, flavoured	<0.001	<0.001	<0.001	<0.001
Muffins and scones	<0.010	<0.010	<0.010	<0.010
Mushrooms	0.079*	0.176*	0.064*	0.029*
Mussels	2.077*	3.978*	3.094*	3.481*
Nectarines	0.005	0.004	0.004	0.004
Noodle dish	0.007	0.005	0.008	0.014
Onions	<0.002	<0.002	<0.002	0.003
Oranges	<0.002	<0.002	<0.002	<0.002
Oysters	2.983*	2.431*	2.311*	3.090*
Pear	0.003	0.003	0.004	0.005
Pizza	0.005	0.006	0.007	0.005
Pork roast	<0.002	<0.002	<0.002	0.004
Potato, hot chips	<0.002	<0.002	<0.002	<0.002
Potatoes with skin	<0.002	<0.002	<0.002	<0.002
Potatoes, peeled	<0.002	<0.002	<0.002	<0.002
Pumpkin	<0.002	<0.002	<0.002	0.003
Rice dish	0.031*	0.024*	0.037*	0.046*

Food	Auckland	Christchurch	Dunedin	Napier
Sausages	0.005	0.012	0.003	<0.002
Silverbeet	<0.002	<0.002	<0.002	<0.002
Strawberries	<0.002	0.006	0.005	0.013
Sushi	0.231*	0.330*	0.218*	0.250*
Tofu	<0.010	<0.010	<0.010	<0.010
Tomato	<0.002	<0.002	<0.002	<0.002
Water, tap	<0.001	<0.001	<0.001	0.003

* Samples with >0.02mg/kg Total arsenic that were further analysed for Inorganic arsenic content

4.1.2.2 Table 7 – Inorganic Arsenic content (mg/kg) of foods in Q3 of 2016 NZTDS, reported to two decimal places

Food	Auckland	Christchurch	Dunedin	Napier
Fish, battered	0.05	<0.02	0.04	<0.02
Fish, fresh	0.04	0.04	0.03	0.03
Mushrooms	<0.02	<0.02	<0.02	<0.02
Mussels	0.07	0.11	0.08	0.14
Oysters	0.06	0.07	0.06	0.08
Rice dish	<0.02	<0.02	<0.02	<0.02
Sushi	<0.02	<0.02	<0.02	<0.02

4.1.3 Cadmium

4.1.3.1 Table 8 - Cadmium content (mg/kg) of foods in Q3 of 2016 NZTDS, reported to four decimal places for all foods except tap water

Food	Auckland	Christchurch	Dunedin	Napier
Apple	0.0011	<0.0004	<0.0004	<0.0004
Avocado	0.0247	0.0185	0.0291	0.0174
Bacon	0.0019	0.0018	0.0010	0.0019
Beef, mince	0.0005	<0.0004	<0.0004	<0.0004
Beef, rump	<0.0004	<0.0004	<0.0004	<0.0004
Bread, mixed grain	0.0072	0.0216	0.0244	0.0079
Bread, wheatmeal	0.0053	0.0215	0.0289	0.0043
Bread, white	0.0031	0.0191	0.0187	0.0036
Broccoli/Cauliflower	0.0042	0.0039	0.0034	0.0023
Butter	<0.0020	<0.0020	<0.0020	<0.0020
Cabbage	0.0039	0.0048	0.0029	0.0033
Cakes and slices	0.0080	0.0083	0.0049	0.0189
Capsicum	0.0015	0.0010	<0.0004	0.0043
Carrots	0.0185	0.0420	0.0324	0.0163
Celery	0.0142	0.0055	0.0151	0.0216
Chicken takeaway	0.0042	0.0014	0.0033	0.0006
Coffee beans, ground	<0.0002	<0.0002	<0.0002	<0.0002
Corned beef	0.0018	0.0023	<0.0004	0.0004
Courgette (Zucchini)	0.0006	0.0010	0.0012	0.0009
Cucumber	0.0007	<0.0004	<0.0004	<0.0004
Eggs	<0.0004	0.0004	<0.0004	0.0004
Fish, battered	<0.0020	0.0066	0.0087	0.0036

Food	Auckland	Christchurch	Dunedin	Napier
Fish, fresh	0.0021	0.0008	0.0016	0.0008
Grapes	<0.0004	0.0005	<0.0004	0.0004
Ham	0.0018	0.0011	0.0017	0.0010
Hamburger, plain	0.0046	0.0103	0.0100	0.0031
Kiwifruit	0.0008	0.0006	0.0005	<0.0004
Kumara	0.0080	0.0054	0.0059	0.0037
Lamb/mutton	<0.0004	<0.0004	<0.0004	<0.0004
Lambs liver	0.2186	0.0978	0.1059	0.0735
Lettuce	0.0192	0.0103	0.0216	0.0168
Mandarins	<0.0004	<0.0004	<0.0004	<0.0004
Meat pie	0.0016	0.0071	0.0053	0.0028
Melon	0.0012	0.0012	0.0009	0.0013
Milk, 0.5% fat (Trim)	<0.0002	<0.0002	<0.0002	<0.0002
Milk, 3.25% fat	<0.0002	<0.0002	<0.0002	<0.0002
Milk, flavoured	0.0010	0.0029	0.0031	0.0023
Muffins and scones	0.0094	0.0157	0.0119	0.0077
Mushrooms	0.0105	0.0070	0.0048	0.0104
Mussels	0.3769	0.3029	0.3869	0.2180
Nectarines	0.0010	0.0009	0.0006	0.0006
Noodle dish	0.0251	0.0059	0.0053	0.0041
Onions	0.0132	0.0414	0.0238	0.0134
Oranges	<0.0004	<0.0004	<0.0004	<0.0004
Oysters	3.0295	3.1852	1.8051	0.3890
Pear	0.0031	0.0015	0.0034	0.0032
Pizza	0.0063	0.0134	0.0130	0.0117
Pork roast	<0.0004	0.0006	<0.0004	<0.0004
Potato, hot chips	0.0446	0.0538	0.0245	0.0484
Potatoes with skin	0.0310	0.0598	0.0605	0.0302
Potatoes, peeled	0.0235	0.0256	0.0444	0.0195
Pumpkin	0.0110	0.0066	0.0102	0.0108
Rice dish	0.0084	0.0074	0.0039	0.0047
Sausages	0.0022	0.0019	0.0032	0.0064
Silverbeet	0.0066	0.0123	0.0165	0.0121
Strawberries	0.0019	0.0008	0.0027	0.0010
Sushi	0.0217	0.0147	0.0172	0.0128
Tofu	0.0125	0.0107	0.0097	0.0115
Tomato	0.0051	<0.0004	<0.0004	0.0008
Water, tap	<0.00005	<0.00005	<0.00005	<0.00005

4.1.4 Fluoride

4.1.4.1 Table 9 - Fluoride content (mg/kg) of foods in Q3 of 2016 NZTDS, reported to two decimal places

Food	Auckland	Christchurch	Dunedin	Napier
Apple	<0.23	<0.25	<0.23	<0.24
Avocado	<0.22	<0.22	<0.22	<0.22
Bread, mixed grain	<1.20	<1.17	<1.17	<1.22
Bread, wheatmeal	<1.22	<1.23	<1.18	<1.15

Food	Auckland	Christchurch	Dunedin	Napier
Bread, white	<1.17	<1.16	<1.23	<1.17
Broccoli/Cauliflower	<0.23	<0.22	<0.23	<0.23
Cabbage	<0.22	<0.23	<0.22	<0.23
Capsicum	<0.21	<0.22	<0.22	<0.22
Carrots	<0.23	<0.22	<0.22	<0.23
Celery	<0.22	<0.22	<0.22	<0.23
Coffee beans, ground	<0.14	<0.17	<0.17	<0.17
Courgette (Zucchini)	<0.24	<0.23	<0.23	<0.23
Cucumber	<0.24	<0.24	<0.24	<0.24
Grapes	<0.23	<0.24	<0.23	<0.24
Kiwifruit	<0.22	<0.22	<0.23	<0.22
Kumara	<0.23	<0.23	<0.23	<0.22
Lettuce	<0.23	<0.22	<0.24	<0.22
Mandarins	<0.23	<0.22	<0.22	<0.22
Melon	<0.22	<0.23	<0.23	<0.22
Mushrooms	<0.24	<0.22	<0.22	<0.22
Nectarines	<0.23	<0.23	<0.23	<0.22
Onions	<0.22	<0.22	<0.24	<0.24
Oranges	<0.23	<0.22	<0.22	<0.22
Pear	<0.23	<0.23	<0.24	<0.24
Potato, hot chips	<0.24	<0.24	<0.25	0.26
Potatoes with skin	<0.24	<0.24	<0.24	<0.24
Potatoes, peeled	<0.24	<0.24	<0.24	<0.24
Pumpkin	<0.24	<0.24	<0.24	<0.24
Silverbeet	<0.24	<0.22	<0.23	<0.23
Strawberries	<0.22	<0.22	<0.22	<0.23
Tofu	0.97	0.93	1.44	1.21
Tomato	<0.30	<0.24	<0.23	<0.23
Water, tap	0.73	0.08	0.77	0.16

4.1.5 Iodine

4.1.5.1 Table 10 - Iodine content (mg/kg) of foods in Q3 of 2016 NZTDS, reported to three decimal places

Food	Auckland	Christchurch	Dunedin	Napier
Apple	<0.002	0.006	0.003	0.006
Avocado	<0.009	<0.010	<0.010	<0.010
Bacon	0.027	0.034	0.023	0.017
Beef, mince	0.012	0.008	0.007	0.010
Beef, rump	0.006	0.005	0.004	0.005
Bread, mixed grain	0.364	0.543	0.348	0.321
Bread, wheatmeal	0.417	0.377	0.358	0.537
Bread, white	0.362	0.400	0.341	0.522
Broccoli/Cauliflower	<0.002	<0.002	<0.002	<0.002
Butter	0.013	0.015	0.016	0.014
Cabbage	0.002	<0.002	<0.002	<0.002
Cakes and slices	0.124	0.107	0.064	0.144
Capsicum	<0.002	<0.002	<0.002	<0.002
Carrots	<0.002	0.009	0.005	<0.002

Food	Auckland	Christchurch	Dunedin	Napier
Celery	<0.002	0.009	0.003	0.030
Chicken takeaway	0.035	0.017	0.058	0.014
Coffee beans, ground	<0.001	<0.001	<0.001	<0.001
Corned beef	0.959	0.130	0.028	0.059
Courgette (Zucchini)	0.003	<0.002	0.002	0.009
Cucumber	0.006	0.004	0.012	0.013
Eggs	0.618	0.498	0.450	0.615
Fish, battered	0.265	0.070	0.032	0.109
Fish, fresh	0.264	0.152	0.179	0.211
Grapes	0.003	<0.002	0.002	0.003
Ham	0.051	0.017	0.039	0.025
Hamburger, plain	0.293	0.268	0.221	0.219
Kiwifruit	<0.002	<0.002	<0.002	<0.002
Kumara	<0.002	<0.002	0.003	0.002
Lamb/mutton	<0.010	2.316*	<0.009	<0.010
Lambs liver	0.051	0.041	0.055	0.042
Lettuce	0.002	<0.002	<0.002	<0.002
Mandarins	<0.002	<0.002	<0.002	<0.002
Meat pie	0.007	0.010	0.037	0.069
Melon	<0.002	<0.002	<0.002	0.006
Milk, 0.5% fat (Trim)	0.068	0.128	0.109	0.109
Milk, 3.25% fat	0.068	0.119	0.098	0.106
Milk, flavoured	0.080	0.057	0.052	0.055
Muffins and scones	0.059	0.072	0.058	0.096
Mushrooms	0.002	0.004	0.002	0.003
Mussels	3.115	2.834	1.526	1.919
Nectarines	<0.002	<0.002	<0.002	<0.002
Noodle dish	0.006	0.004	0.108	0.045
Onions	0.006	0.004	0.003	0.005
Oranges	<0.002	<0.002	<0.002	<0.002
Oysters	0.941	1.135	1.152	0.807
Pear	<0.002	<0.002	<0.002	0.003
Pizza	0.042	0.087	0.027	0.066
Pork roast	0.005	0.005	0.004	0.010
Potato, hot chips	<0.002	0.220	<0.002	0.004
Potatoes with skin	<0.002	<0.002	<0.002	0.003
Potatoes, peeled	<0.002	<0.002	<0.002	<0.002
Pumpkin	0.004	0.003	<0.002	<0.002
Rice dish	0.093	0.020	0.177	0.024
Sausages	0.086	0.057	0.302	0.517
Silverbeet	0.026	0.007	0.003	0.004
Strawberries	<0.002	0.003	<0.002	0.003
Sushi	0.198	0.224	0.269	0.332
Tofu	<0.010	<0.010	<0.010	<0.010
Tomato	<0.002	<0.002	<0.002	<0.002
Water, tap	0.003	<0.001	<0.001	0.011

*Note result is under investigation as being unexpectedly elevated for this food type

4.1.6 Lead

4.1.6.1 Table 11 - Lead content (mg/kg) of foods in Q3 of 2016 NZTDS, reported to three decimal places for all foods except tap water

Food	Auckland	Christchurch	Dunedin	Napier
Apple	<0.002	<0.002	<0.002	<0.002
Avocado	<0.010	<0.010	<0.010	<0.010
Bacon	0.003	0.003	0.002	<0.002
Beef, mince	<0.002	<0.002	0.002	0.002
Beef, rump	<0.002	<0.002	<0.002	<0.002
Bread, mixed grain	<0.010	<0.010	<0.010	<0.010
Bread, wheatmeal	0.017	<0.010	<0.010	<0.010
Bread, white	<0.010	<0.010	<0.010	<0.010
Broccoli/Cauliflower	<0.002	<0.002	<0.002	<0.002
Butter	<0.010	<0.010	<0.010	<0.010
Cabbage	<0.002	<0.002	<0.002	<0.002
Cakes and slices	<0.010	<0.010	<0.010	<0.010
Capsicum	<0.002	<0.002	<0.002	<0.002
Carrots	<0.002	<0.002	<0.002	0.002
Celery	<0.002	<0.002	<0.002	<0.002
Chicken takeaway	<0.002	<0.002	0.003	<0.002
Coffee beans, ground	<0.001	<0.001	<0.001	<0.001
Corned beef	0.002	0.004	<0.002	<0.002
Courgette (Zucchini)	<0.002	<0.002	<0.002	<0.002
Cucumber	<0.002	<0.002	<0.002	<0.002
Eggs	<0.002	<0.002	<0.002	<0.002
Fish, battered	<0.010	<0.009	<0.010	<0.010
Fish, fresh	<0.002	<0.002	<0.002	<0.002
Grapes	<0.002	<0.002	<0.002	0.002
Ham	0.007	0.005	0.005	0.003
Hamburger, plain	0.005	0.004	0.003	0.006
Kiwifruit	<0.002	<0.002	<0.002	<0.002
Kumara	0.003	0.003	0.007	0.004
Lamb/mutton	<0.002	<0.002	<0.002	<0.002
Lambs liver	0.023	0.046	0.020	0.020
Lettuce	<0.002	<0.002	<0.002	<0.002
Mandarins	<0.002	<0.002	<0.002	<0.002
Meat pie	<0.002	0.002	<0.002	0.008
Melon	<0.002	<0.002	<0.002	<0.002
Milk, 0.5% fat (Trim)	<0.001	<0.001	<0.001	<0.001
Milk, 3.25% fat	<0.001	<0.001	<0.001	<0.001
Milk, flavoured	<0.001	0.002	0.002	0.002
Muffins and scones	<0.010	<0.010	<0.010	<0.010
Mushrooms	0.008	0.005	0.003	0.002
Mussels	0.228	0.166	0.092	0.089
Nectarines	<0.002	<0.002	<0.002	<0.002
Noodle dish	<0.002	0.002	0.006	<0.002
Onions	0.006	<0.002	0.003	<0.002
Oranges	<0.002	<0.002	<0.002	<0.002
Oysters	0.034	0.056	0.040	0.068

Food	Auckland	Christchurch	Dunedin	Napier
Pear	<0.002	<0.002	<0.002	0.002
Pizza	0.003	0.004	0.003	0.005
Pork roast	<0.002	<0.002	<0.002	<0.002
Potato, hot chips	<0.002	<0.002	<0.002	0.002
Potatoes with skin	<0.002	<0.002	<0.002	0.002
Potatoes, peeled	<0.002	<0.002	<0.002	<0.002
Pumpkin	0.004	0.003	<0.002	0.003
Rice dish	<0.002	<0.002	<0.002	0.007
Sausages	0.003	<0.002	0.004	0.003
Silverbeet	0.010	0.004	<0.002	0.004
Strawberries	<0.002	<0.002	<0.002	<0.002
Sushi	0.006	0.007	0.003	0.003
Tofu	0.009	0.004	0.004	0.005
Tomato	<0.002	<0.002	<0.002	<0.002
Water, tap	0.0003	0.0003	0.0002	<0.0001

4.1.7 Mercury (Total and Methyl Mercury)

4.1.7.1 Table 12 – Total mercury content (mg/kg) of foods in Q3 of 2016 NZTDS, reported to three decimal places

Food	Auckland	Christchurch	Dunedin	Napier
Apple	<0.002	<0.002	<0.002	<0.002
Avocado	<0.010	<0.010	<0.010	<0.010
Bacon	<0.002	<0.002	<0.002	<0.002
Beef, mince	<0.002	<0.002	<0.002	<0.002
Beef, rump	<0.002	<0.002	<0.002	<0.002
Bread, mixed grain	<0.010	<0.010	<0.010	<0.010
Bread, wheatmeal	<0.010	<0.010	<0.010	<0.010
Bread, white	<0.010	<0.010	<0.010	<0.010
Broccoli/Cauliflower	<0.002	<0.002	<0.002	<0.002
Butter	<0.001	<0.001	<0.001	<0.001
Cabbage	<0.002	<0.002	<0.002	<0.002
Cakes and slices	<0.010	<0.010	<0.010	<0.010
Capsicum	<0.002	<0.002	<0.002	<0.002
Carrots	<0.002	<0.002	<0.002	<0.002
Celery	<0.002	<0.002	<0.002	<0.002
Chicken takeaway	<0.002	<0.002	<0.002	<0.002
Coffee beans, ground	<0.001	<0.001	<0.001	<0.001
Corned beef	<0.002	<0.002	<0.002	<0.002
Courgette (Zucchini)	<0.002	<0.002	<0.002	<0.002
Cucumber	<0.002	<0.002	<0.002	<0.002
Eggs	<0.002	<0.002	<0.002	<0.002
Fish, battered	0.102*	0.067*	0.057*	0.165*
Fish, fresh	0.253*	0.124*	0.145*	0.285*
Grapes	<0.002	<0.002	<0.002	<0.002
Ham	<0.002	<0.002	<0.002	<0.002
Hamburger, plain	<0.002	<0.002	<0.002	<0.002
Kiwifruit	<0.002	<0.002	<0.002	<0.002
Kumara	<0.002	<0.002	<0.002	<0.002

Food	Auckland	Christchurch	Dunedin	Napier
Lamb/mutton	<0.002	<0.002	<0.002	<0.002
Lambs liver	0.004	0.003	0.006	0.003
Lettuce	<0.002	<0.002	<0.002	<0.002
Mandarins	<0.002	<0.002	<0.002	<0.002
Meat pie	<0.002	<0.002	<0.002	<0.002
Melon	<0.002	<0.002	<0.002	<0.002
Milk, 0.5% fat (Trim)	<0.001	<0.001	<0.001	<0.001
Milk, 3.25% fat	<0.001	<0.001	<0.001	<0.001
Milk, flavoured	<0.001	<0.001	<0.001	<0.001
Muffins and scones	<0.010	<0.010	<0.010	<0.010
Mushrooms	0.007	0.003	<0.002	0.003
Mussels	0.017*	0.014*	0.015*	0.019*
Nectarines	<0.002	<0.002	<0.002	<0.002
Noodle dish	<0.002	<0.002	<0.002	<0.002
Onions	<0.002	<0.002	<0.002	<0.002
Oranges	<0.002	<0.002	<0.002	<0.002
Oysters	0.013*	0.014*	0.030*	0.022*
Pear	<0.002	<0.002	<0.002	<0.002
Pizza	<0.002	<0.002	<0.002	<0.002
Pork roast	0.004	<0.002	0.002	0.002
Potato, hot chips	<0.002	<0.002	<0.002	<0.002
Potatoes with skin	<0.002	<0.002	<0.002	<0.002
Potatoes, peeled	<0.002	<0.002	<0.002	<0.002
Pumpkin	<0.002	<0.002	<0.002	<0.002
Rice dish	<0.002	<0.002	<0.002	<0.002
Sausages	<0.002	0.003	<0.002	<0.002
Silverbeet	<0.002	<0.002	<0.002	<0.002
Strawberries	<0.002	<0.002	<0.002	<0.002
Sushi	0.009*	0.015*	0.005*	0.003*
Tofu	<0.002	<0.002	<0.002	<0.002
Tomato	<0.002	<0.002	<0.002	<0.002
Water, tap	<0.002	<0.002	<0.002	<0.002

*Samples further analysed for methyl mercury content

4.1.7.2 Table 13 - Methyl Mercury content (mg/kg) of foods in Q3 of 2016 NZTDS, reported to three decimal places

Food	Auckland	Christchurch	Dunedin	Napier
Fish, battered	0.116	0.064	0.045	0.168
Fish, fresh	0.266	0.087	0.172	0.163
Mussels	0.005	<0.004	<0.004	<0.004
Oysters	<0.004	<0.004	0.006	<0.004
Sushi	0.006	0.010	<0.004	<0.004

4.1.8 Selenium

4.1.8.1 Table 14 –Selenium content (mg/kg) of foods in Q3 of 2016 NZTDS, reported to three decimal places

Food	Auckland	Christchurch	Dunedin	Napier
Apple	<0.004	<0.004	<0.004	<0.004
Avocado	<0.019	<0.020	<0.020	<0.019
Bacon	0.154	0.203	0.129	0.142
Beef, mince	0.101	0.070	0.075	0.092
Beef, rump	0.130	0.064	0.101	0.108
Bread, mixed grain	0.059	0.025	<0.020	0.067
Bread, wheatmeal	0.093	0.035	0.022	0.090
Bread, white	0.075	0.025	<0.020	0.085
Broccoli/Cauliflower	0.009	0.005	0.023	0.006
Butter	<0.020	<0.020	<0.020	<0.020
Cabbage	<0.004	<0.004	<0.004	0.014
Cakes and slices	0.036	0.050	0.041	0.079
Capsicum	<0.004	<0.004	<0.004	<0.004
Carrots	<0.004	<0.004	<0.004	<0.004
Celery	<0.004	<0.004	<0.004	<0.004
Chicken takeaway	0.164	0.202	0.151	0.274
Coffee beans, ground	<0.002	<0.002	<0.002	<0.002
Corned beef	0.074	0.076	0.099	0.074
Courgette (Zucchini)	<0.004	<0.004	<0.004	<0.004
Cucumber	<0.004	<0.004	<0.004	<0.004
Eggs	0.261	0.295	0.249	0.249
Fish, battered	0.475	0.306	0.288	0.318
Fish, fresh	0.387	0.592	0.434	0.544
Grapes	<0.004	<0.004	<0.004	<0.004
Ham	0.095	0.167	0.096	0.195
Hamburger, plain	0.089	0.077	0.094	0.097
Kiwifruit	0.004	<0.004	<0.004	0.016
Kumara	<0.004	<0.004	<0.004	<0.004
Lamb/mutton	0.074	0.064	0.043	0.059
Lambs liver	0.380	0.190	0.095	0.138
Lettuce	<0.004	<0.004	<0.004	<0.004
Mandarins	<0.004	<0.004	<0.004	<0.004
Meat pie	0.062	0.061	0.046	0.052
Melon	<0.004	<0.004	<0.004	<0.004
Milk, 0.5% fat (Trim)	0.008	0.008	0.008	0.007
Milk, 3.25% fat	0.006	0.006	0.007	0.008
Milk, flavoured	0.013	0.011	0.009	0.008
Muffins and scones	0.041	0.043	0.039	0.063
Mushrooms	0.274	0.406	0.252	0.412
Mussels	0.813	0.679	0.560	0.569
Nectarines	<0.004	<0.004	<0.004	<0.004
Noodle dish	0.030	0.035	0.029	0.042
Onions	0.009	<0.004	<0.004	<0.004
Oranges	<0.004	<0.004	<0.004	<0.004
Oysters	0.396	0.541	0.414	0.564

Food	Auckland	Christchurch	Dunedin	Napier
Pear	<0.004	<0.004	<0.004	<0.004
Pizza	0.087	0.032	0.074	0.063
Pork roast	0.170	0.193	0.188	0.178
Potato, hot chips	<0.004	<0.004	<0.004	0.008
Potatoes with skin	<0.004	<0.004	<0.004	<0.004
Potatoes, peeled	<0.004	<0.004	<0.004	0.004
Pumpkin	<0.004	<0.004	0.004	0.006
Rice dish	0.098	0.054	0.090	0.079
Sausages	0.094	0.107	0.112	0.052
Silverbeet	0.008	<0.004	0.032	<0.004
Strawberries	<0.004	<0.004	<0.004	<0.004
Sushi	0.078	0.074	0.062	0.073
Tofu	0.069	0.050	0.040	0.046
Tomato	<0.004	<0.004	<0.004	<0.004
Water, tap	<0.001	<0.001	<0.001	<0.001

4.1.9 Sodium

4.1.9.1 Table 15 – Sodium content (mg/kg) of foods in Q3 of 2016 NZTDS, reported to whole numbers in all foods

Food	Auckland	Christchurch	Dunedin	Napier
Apple	18	<10	17	<10
Avocado	130	130	97	216
Bacon	17900	15761	16591	15207
Beef, mince	852	838	844	808
Beef, rump	576	653	596	620
Bread, mixed grain	4066	4243	4172	3956
Bread, wheatmeal	3944	4255	4032	4099
Bread, white	4290	4289	4494	4532
Broccoli/Cauliflower	46	17	22	26
Butter	5393	5588	5382	5431
Cabbage	36	51	69	55
Cakes and slices	2297	3002	2598	2706
Capsicum	<10	<10	<10	<10
Carrots	269	1050	959	572
Celery	289	436	867	358
Chicken takeaway	5330	6714	7169	2878
Coffee beans, ground	<5	<5	<5	<5
Corned beef	7565	7663	7311	6716
Courgette (Zucchini)	<10	<10	<10	<10
Cucumber	47	18	24	29
Eggs	1490	1401	1499	1464
Fish, battered	1695	1953	1383	1479
Fish, fresh	752	817	761	832
Grapes	25	50	47	31
Ham	15264	9225	13252	11479
Hamburger, plain	4599	4977	4604	3438
Kiwifruit	24	<10	11	21

Food	Auckland	Christchurch	Dunedin	Napier
Kumara	254	859	285	123
Lamb/mutton	711	844	825	825
Lambs liver	915	825	861	1044
Lettuce	17	26	20	19
Mandarins	25	<10	12	15
Meat pie	4573	3889	4639	4834
Melon	154	97	85	113
Milk, 0.5% fat (Trim)	362	397	404	379
Milk, 3.25% fat	363	391	376	371
Milk, flavoured	354	413	416	385
Muffins and scones	5156	5456	4951	5242
Mushrooms	83	54	55	73
Mussels	2659	5966	4053	4026
Nectarines	<10	<10	<10	<10
Noodle dish	3448	2105	4815	3226
Onions	20	34	30	85
Oranges	11	<10	<10	<10
Oysters	4711	4348	5418	4383
Pear	<10	<10	<10	14
Pizza	4981	4381	5060	5197
Pork roast	676	684	651	896
Potato, hot chips	1416	1512	3654	2166
Potatoes with skin	<10	20	18	13
Potatoes, peeled	<10	11	11	<10
Pumpkin	<10	12	<10	<10
Rice dish	4457	2048	4481	4219
Sausages	8177	9443	8642	9926
Silverbeet	549	529	223	388
Strawberries	19	<10	11	<10
Sushi	4223	4733	4676	6454
Tofu	3287	19	15	44
Tomato	34	32	18	19
Water, tap	10	7	5	12

4.1.10 Tin

4.1.10.1 Table 16 – Tin content (mg/kg) of foods in Q3 of 2016 NZTDS, reported to two decimal places for all foods except coffee, milk and tap water

Food	Auckland	Christchurch	Dunedin	Napier
Apple	<0.01	<0.01	<0.01	<0.01
Avocado	<0.05	<0.05	<0.05	<0.05
Bacon	<0.01	<0.01	<0.01	<0.01
Beef, mince	<0.01	<0.01	<0.01	<0.01
Beef, rump	<0.01	<0.01	<0.01	<0.01
Bread, mixed grain	<0.05	<0.05	<0.05	<0.05
Bread, wheatmeal	<0.05	<0.05	<0.05	<0.05
Bread, white	<0.05	<0.05	<0.05	<0.05
Broccoli/Cauliflower	<0.01	<0.01	<0.01	<0.01
Butter	<0.05	<0.05	<0.05	<0.05

Food	Auckland	Christchurch	Dunedin	Napier
Cabbage	<0.01	<0.01	<0.01	<0.01
Cakes and slices	<0.05	<0.05	<0.05	<0.05
Capsicum	<0.01	<0.01	<0.01	<0.01
Carrots	<0.01	<0.01	<0.01	<0.01
Celery	<0.01	<0.01	<0.01	<0.01
Chicken takeaway	<0.01	<0.01	<0.01	<0.01
Coffee beans, ground	<0.005	<0.005	<0.005	<0.005
Corned beef	1.61	5.24	1.81	0.83
Courgette (Zucchini)	<0.01	<0.01	<0.01	<0.01
Cucumber	<0.01	<0.01	<0.01	<0.01
Eggs	<0.01	<0.01	<0.01	<0.01
Fish, battered	<0.05	<0.05	<0.05	<0.05
Fish, fresh	<0.01	<0.01	0.02	<0.01
Grapes	<0.01	<0.01	<0.01	<0.01
Ham	<0.01	0.01	<0.01	<0.01
Hamburger, plain	<0.01	<0.01	0.01	0.01
Kiwifruit	<0.01	<0.01	<0.01	<0.01
Kumara	<0.01	<0.01	<0.01	<0.01
Lamb/mutton	<0.01	<0.01	<0.01	<0.01
Lambs liver	0.02	<0.01	<0.01	<0.01
Lettuce	<0.01	<0.01	<0.01	<0.01
Mandarins	<0.01	<0.01	<0.01	<0.01
Meat pie	<0.01	0.01	<0.01	0.08
Melon	<0.01	<0.01	<0.01	<0.01
Milk, 0.5% fat (Trim)	<0.005	<0.005	<0.005	<0.005
Milk, 3.25% fat	<0.005	<0.005	<0.005	<0.005
Milk, flavoured	<0.005	0.010	<0.005	<0.005
Muffins and scones	<0.05	<0.05	<0.05	<0.05
Mushrooms	<0.01	<0.01	<0.01	<0.01
Mussels	<0.04	<0.04	<0.04	<0.04
Nectarines	<0.01	<0.01	<0.01	<0.01
Noodle dish	<0.01	<0.01	0.01	<0.01
Onions	<0.01	<0.01	<0.01	<0.01
Oranges	<0.01	<0.01	<0.01	<0.01
Oysters	<0.05	<0.05	<0.05	<0.05
Pear	<0.01	<0.01	<0.01	<0.01
Pizza	0.52	7.13	2.32	3.24
Pork roast	<0.01	<0.01	<0.01	<0.01
Potato, hot chips	<0.01	<0.01	<0.01	<0.01
Potatoes with skin	<0.01	<0.01	<0.01	<0.01
Potatoes, peeled	<0.01	<0.01	<0.01	<0.01
Pumpkin	<0.01	<0.01	<0.01	<0.01
Rice dish	0.03	2.09	<0.01	0.03
Sausages	<0.01	0.08	0.01	<0.01
Silverbeet	<0.01	<0.01	<0.01	<0.01
Strawberries	<0.01	<0.01	<0.01	<0.01
Sushi	<0.01	<0.01	<0.01	<0.01
Tofu	<0.01	<0.01	<0.01	<0.01
Tomato	<0.01	<0.01	<0.01	<0.01

Food	Auckland	Christchurch	Dunedin	Napier
Water, tap	<0.0005	<0.0005	<0.0005	<0.0005

4.1.11 Zinc

4.1.11.1 Table 17 –Zinc content (mg/kg) of foods in Q3 of 2016 NZTDS, reported to two decimal places for all foods

Food	Auckland	Christchurch	Dunedin	Napier
Apple	0.33	0.35	0.36	0.38
Avocado	5.64	5.30	6.00	5.09
Bacon	22.05	21.91	19.71	18.86
Beef, mince	79.68	73.68	74.26	89.61
Beef, rump	60.79	57.94	55.27	57.41
Bread, mixed grain	10.18	10.51	10.10	10.96
Bread, wheatmeal	13.80	10.35	13.38	13.06
Bread, white	8.01	7.50	7.62	8.09
Broccoli/Cauliflower	1.47	1.85	1.94	2.29
Butter	<1.00	<1.00	<1.00	<1.00
Cabbage	1.25	2.56	2.59	2.12
Cakes and slices	5.05	4.48	3.84	7.04
Capsicum	1.53	1.58	1.49	1.14
Carrots	1.79	1.36	1.44	1.94
Celery	0.76	0.56	1.45	0.81
Chicken takeaway	11.13	16.33	10.69	17.71
Coffee beans, ground	<0.10	<0.10	<0.10	<0.10
Corned beef	33.50	45.01	44.69	46.24
Courgette (Zucchini)	4.30	3.56	4.52	5.04
Cucumber	1.03	1.02	0.99	1.00
Eggs	11.97	12.88	12.13	13.55
Fish, battered	3.75	2.55	4.89	2.93
Fish, fresh	3.55	3.49	4.32	3.45
Grapes	0.42	0.63	0.49	0.60
Ham	13.78	16.50	13.56	13.18
Hamburger, plain	22.40	20.41	21.65	31.37
Kiwifruit	1.08	1.03	0.92	1.16
Kumara	4.32	5.47	4.73	4.12
Lamb/mutton	48.36	66.82	58.91	60.22
Lambs liver	83.67	61.62	61.40	68.59
Lettuce	1.72	2.36	2.87	1.40
Mandarins	1.03	0.59	0.64	0.74
Meat pie	16.83	13.87	17.22	13.29
Melon	1.27	1.40	1.48	1.06
Milk, 0.5% fat (Trim)	4.18	3.97	3.72	4.25
Milk, 3.25% fat	3.58	3.30	3.40	3.74
Milk, flavoured	4.70	5.04	4.87	4.67
Muffins and scones	7.84	8.07	5.23	7.86
Mushrooms	10.15	8.77	8.20	8.95
Mussels	18.47	21.50	12.99	14.70
Nectarines	1.48	1.21	1.27	1.43
Noodle dish	8.56	2.83	5.03	7.17

Food	Auckland	Christchurch	Dunedin	Napier
Onions	2.53	3.51	2.04	2.52
Oranges	0.55	0.53	0.54	0.50
Oysters	96.80	56.22	150.30	125.60
Pear	1.00	0.99	0.98	1.03
Pizza	14.21	11.39	11.05	11.46
Pork roast	30.58	32.86	30.36	42.28
Potato, hot chips	5.20	4.33	4.64	5.09
Potatoes with skin	3.71	3.52	4.24	3.78
Potatoes, peeled	2.30	2.07	2.45	2.17
Pumpkin	5.53	5.91	4.70	4.53
Rice dish	9.69	7.24	9.34	8.28
Sausages	20.60	20.03	15.41	17.69
Silverbeet	1.22	2.48	3.06	2.16
Strawberries	1.93	1.50	1.96	2.07
Sushi	7.05	5.87	6.69	5.90
Tofu	10.96	12.13	9.86	9.54
Tomato	1.32	1.34	1.45	0.97
Water, tap	0.02	0.04	0.03	0.01

4.2 AGRICULTURAL COMPOUNDS

For agricultural compounds, results are reported in four sections: compounds in the multi-residue screen that were not detected in any food for Q3 (which are listed collectively); each agricultural compound detected reported on a per compound basis in all foods with positive results; CS₂ detects; and Phenoxy and aromatic acid herbicides.

All agricultural compound results in the NZTDS are reported on a ‘foods as consumed’ basis. As some agricultural compounds are measured using several marker analytes the reported residue is as the parent agricultural compound with the detected analyte or analytes recorded in brackets.

Agricultural compounds are applied to specific foods, often under specific conditions or only at certain times. Different producers of a particular crop will not necessarily use the same compounds to perform the same tasks. This specificity suggests that residues will only be present in specific foods, rather than as ubiquitous contaminants present in all food groups. In addition, many compounds are known to break down rapidly in the environment. Therefore, for most agricultural compounds in most foods, a ‘not detected’ (ND) result is likely to represent a true zero result.

4.2.1 Agricultural compounds not detected in any food in Q3 of 2016 NZTDS

Of the 301 agricultural compound analytes in the multi-screen for the 2016 NZTDS, 245 analytes were not detected in any of the foods sampled in Q3. Positive residues were detected in six foods analysed in the CS₂ analytical screen. Additionally of the 21 analytes in the phenoxy and aromatic acid herbicide screen, 18 were not detected in any of the foods sampled in Q3.

4.2.2 Multi-screen residues detected in Q3 of 2016 NZTDS

4.2.2.1 Table 18 – Acephate residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Capsicum	0.02	0.02	ND	ND
Mandarins	ND	ND	0.02	ND
Melon	ND	0.09	ND	ND

4.2.2.2 Table 19 – Benzalkonium Chloride (C12, C14 and C16) residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Bacon	ND	0.13 ^{a,b}	0.07 ^a	0.06 ^a
Beef, mince	0.19 ^{a,b}	ND	0.24 ^{a,b}	ND
Beef, rump	0.07 ^a	ND	ND	ND
Chicken takeaway	0.18 ^{a,b}	ND	0.22 ^{a,b}	ND
Fish, fresh	ND	0.20 ^{a,b,c}	ND	ND
Ham	0.27 ^{a,b}	0.07 ^a	ND	0.05 ^a
Hamburger, plain	ND	ND	ND	0.22 ^{a,b}
Lamb/mutton	ND	ND	0.06 ^a	ND
Meat pie	ND	ND	0.31 ^{a,b,c}	ND
Mussels	ND	0.06 ^a	ND	0.09 ^b
Potatoes, hot chips	ND	0.16 ^a	ND	ND
Sausages	0.13 ^a	ND	0.11 ^{a,b}	ND
Tofu	0.88 ^{a,b}	ND	ND	ND

^a contains Benzalkonium Chloride (C12), ^b contains Benzalkonium Chloride (C14), ^c contains Benzalkonium Chloride (C16),

4.2.2.3 Table 20 – Bifenthrin residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Courgette (Zucchini)	ND	ND	0.01	ND

4.2.2.4 Table 21 – Boscalid residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Grapes	0.04	0.06	0.07	0.02
Muffins and scones	0.02	ND	ND	ND

4.2.2.5 Table 22 – Buprofezin residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Grapes	ND	0.05	0.05	0.01

4.2.2.6 Table 23 – Captan residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Apple	0.05	0.03	0.08	0.05
Pear	0.07	0.10	0.05	0.04
Strawberries	0.98	0.62	0.52	0.31

4.2.2.7 Table 24 – Carbendazim (including benomyl and thiophanate) residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Broccoli/cauliflower	ND	0.04	ND	ND
Capsicum	ND	0.03	ND	ND
Mushrooms	0.10	ND	ND	ND
Pear	ND	0.03	ND	ND
Rice dish	ND	0.01	ND	ND
Strawberries	ND	ND	0.09	ND
Tomato	0.01	0.01	0.03	ND

4.2.2.8 Table 25 – Chlorantraniliprole residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Grapes	0.03	0.04	0.03	ND
Strawberries	ND	0.02	ND	0.01

4.2.2.9 Table 26 – Chlorothalonil residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Capsicum	ND	ND	ND	0.01
Celery	0.03	0.02	0.02	0.02
Lettuce	ND	0.07	ND	ND
Tomato	0.05	ND	ND	ND

4.2.2.10 Table 27 – Chlorpropham residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Meat pie	ND	0.02	ND	ND
Potatoes, hot chips	0.31	0.11	0.16	0.09

4.2.2.11 Table 28 – Chlorpyrifos-methyl residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Bread, mixed grain	0.06	0.05	0.04	0.05
Bread, wheatmeal	0.10	0.36	0.23	0.18
Bread, white	0.08	0.07	0.05	0.06
Hamburger, plain	0.02	ND	ND	0.01
Meat pie	0.03	ND	ND	ND

Food	Auckland	Christchurch	Dunedin	Napier
Pizza	0.02	0.05	ND	ND

4.2.2.12 Table 29 – Cyflufenamid residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Grapes	ND	0.01	0.01	ND

4.2.2.13 Table 30– Cyprodinil residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Grapes	0.04	ND	ND	0.09
Strawberries	ND	0.12	0.30	0.44

4.2.2.14 Table 31 – DDT (p,p’-DDE) residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Lamb/mutton	ND	ND	0.02	ND

4.2.2.15 Table 32 – Dichloran residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Kumara	0.02	0.01	0.02	0.01

4.2.2.16 Table 33 – Didecyldimethylammonium chloride (DDAC) residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Chicken takeaway	0.05	ND	ND	ND
Fish, fresh	ND	0.18	ND	ND
Mussels	ND	ND	ND	0.11
Strawberries	ND	0.03	ND	ND
Sushi	ND	0.03	ND	ND
Tofu	0.01	ND	ND	0.02

4.2.2.17 Table 34 – Difenoconazole residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Broccoli/cauliflower	ND	0.03	ND	ND
Celery	ND	ND	0.04	ND
Noodle dish	ND	ND	ND	0.04
Sushi	ND	ND	ND	0.02

4.2.2.18 Table 35 – Dimethoate residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Courgette (Zucchini)	0.06	0.01	ND	0.07
Strawberries	ND	ND	0.03	ND

4.2.2.19 Table 36 – Diphenylamine residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Pear	0.21	ND	0.23	ND

4.2.2.20 Table 37 – Etoxazole residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Grape	ND	0.02	0.03	0.01

4.2.2.21 Table 38 – Fenhexamid residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Strawberries	0.36	ND	0.04	ND

4.2.2.22 Table 39 – Fenpropathin residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Grapes	0.07	ND	ND	ND

4.2.2.23 Table 40 – Fludioxonil residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Grapes	0.01	ND	ND	ND
Nectarines	0.37	0.41	0.12	0.49
Pear	ND	ND	0.06	ND
Strawberries	ND	0.09	0.25	0.30

4.2.2.24 Table 41 – Imazalil residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Oranges	0.04	0.03	0.02	ND
Pear	0.14	ND	0.14	ND

4.2.2.25 Table 42 – Imidacloprid residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Capsicum	0.03	0.02	ND	0.03
Courgette (Zucchini)	ND	ND	0.02	ND
Lettuce	ND	ND	0.02	0.01

Food	Auckland	Christchurch	Dunedin	Napier
Tomato	0.03	ND	ND	ND

4.2.2.26 Table 43 – Indoxacarb residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Nectarines	ND	ND	0.01	ND
Strawberries	ND	0.04	0.05	0.05

4.2.2.27 Table 44 – Iprodione residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Pear	0.14	ND	0.11	ND
Tomato	0.05	ND	ND	ND
Strawberries	1.08	0.78	0.06	0.16

4.2.2.28 Table 45 – Linuron residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Celery	ND	0.01	ND	ND

4.2.2.29 Table 46 – Lufenuron residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Capsicum	0.02	ND	ND	ND

4.2.2.30 Table 47 – Malathion residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Bread, wheatmeal	ND	0.01	ND	ND

4.2.2.31 Table 48 – Metalaxyl residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Cucumber	0.02	ND	ND	ND

4.2.2.32 Table 49 – Methamidophos residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Capsicum	ND	0.04	ND	ND

4.2.2.33 Table 50 – Methomyl residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Bread, wheatmeal	ND	ND	0.06	ND

Food	Auckland	Christchurch	Dunedin	Napier
Capsicum	0.02	ND	ND	ND
Courgette (Zucchini)	0.06	ND	0.01	0.02

4.2.2.34 Table 51 –Methoxyfenozide residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Nectarines	ND	ND	ND	0.02

4.2.2.35 Table 52 –Myclobutanil residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Grapes	0.01	0.01	ND	ND
Strawberries	0.02	0.03	0.03	ND

4.2.2.36 Table 53 –Omethoate residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Courgette (Zucchini)	0.02	ND	ND	0.02

4.2.2.37 Table 54 – Piperonyl-butoxide residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Bread, wheatmeal	0.01	ND	ND	0.03

4.2.2.38 Table 55 – Pirimicarb residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Strawberries	0.10	ND	0.02	ND

4.2.2.39 Table 56 – Pirimiphos-methyl residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Bread, mixed grain	0.05	0.09	0.11	0.04
Bread, wheatmeal	ND	0.05	0.16	0.02
Bread, white	ND	0.06	0.09	ND
Cakes and slices	0.02	0.02	0.05	ND
Fish, battered	ND	0.02	0.02	ND
Hamburger, plain	ND	0.03	0.04	ND
Meat pie	ND	0.01	ND	ND
Muffins and scones	0.01	0.03	0.04	0.02
Noodle dish	ND	0.01	ND	ND
Pizza	ND	0.06	0.06	0.03
Sausages	ND	ND	ND	0.05

4.2.2.40 Table 57 –Prochloraz residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Mushrooms	0.01	0.01	0.01	0.05
Strawberries	0.01	ND	ND	ND

4.2.2.41 Table 58 –Procymidone residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Cucumber	0.02	ND	ND	ND
Pumpkin	ND	0.02	0.02	ND
Tomato	0.04	ND	ND	ND

4.2.2.42 Table 59 –Propamocarb residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Cucumber	0.07	0.06	0.04	0.02

4.2.2.43 Table 60 –Propham residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Apple	ND	ND	0.02	0.07
Pear	ND	0.03	ND	0.02
Potatoes, peeled	0.04	1.59	0.55	0.60
Potatoes with skin	0.07	2.10	1.52	0.75

4.2.2.44 Table 61 –Pyraclostrobin residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Grapes	0.01	0.02	0.02	ND

4.2.2.45 Table 62 –Pyrimethanil residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Muffins and scones	0.01	ND	ND	ND
Strawberries	0.76	0.13	0.07	0.19

4.2.2.46 Table 63 –Spinetoram residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Capsicum	ND	0.01	ND	ND
Nectarines	ND	0.01	0.01	0.01

4.2.2.47 Table 64 – Spinosad residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Bread, mixed grain	0.01	ND	ND	ND
Bread, wheatmeal	0.01	0.02	0.02	0.02
Bread, white	0.01	ND	ND	ND

4.2.2.48 Table 65–Spiromesifen residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Tomato	ND	ND	ND	0.03

4.2.2.49 Table 66 –Spirotetramat (Spiroteramat-cis-enol and Spirotetramat-enol-glucoside) residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Grapes	ND	0.04 ^b	0.05 ^b	0.02 ^b
Potatoes, hot chips	0.02 ^a	ND	0.03 ^a	0.03 ^a

^a contains Spiroteramat-cis-enol

^b contains Spirotetramat-enol-glucoside (not a component of the residue definition for MRL enforcement)

4.2.2.50 Table 67 – Sulfoxaflor residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Cucumber	ND	0.05	ND	ND
Tomato	0.01	0.01	ND	0.04

4.2.2.51 Table 68 – Tebufenozide residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Apple	ND	ND	ND	0.01

4.2.2.52 Table 69 – Thiamethoxam residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Courgette (Zucchini)	0.02	ND	ND	ND

4.2.2.53 Table 70 – Thiophanate-methyl residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Tomato	0.02	ND	ND	ND

4.2.2.54 Table 71 – Triadimenol residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Rice dish	ND	ND	ND	0.01

4.2.2.55 Table 72 – Triallate residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Mussels	0.01	ND	ND	ND

4.2.2.56 Table 73 – Trifloxystrobin residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Grapes	ND	ND	0.01	ND
Strawberries	0.04	ND	ND	0.02

4.2.3 Carbon disulphide (CS₂) residues detected in Q3 of 2016 NZTDS

4.2.3.1 Table 74– Carbon disulphide (CS₂) residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Avocado	ND	0.02	ND	ND
Broccoli/cauliflower	ND	ND	0.03	0.04
Cabbage	0.11	0.07	0.05	0.21
Cucumber	0.06	ND	0.03	ND
Potatoes, hot chips	ND	ND	ND	0.04
Strawberries	ND	0.74	0.15	0.41

4.2.4 Phenoxy and aromatic acid herbicides detected in Q3 of 2016 NZTDS

4.2.4.1 Table 75 – Clopyralid residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Bread, mixed grain	0.01	0.05	0.07	ND
Bread, wheatmeal	0.02	0.03	0.05	0.03
Bread, white	ND	0.01	0.02	0.01
Kumara	ND	ND	0.18	ND
Onions	ND	0.02	ND	ND

4.2.4.2 Table 76 – Fluazifop residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Potatoes, peeled	ND	ND	0.02	ND
Potatoes with skin	ND	ND	0.09	ND

4.2.4.3 Table 77 – Haloxyfop residues (mg/kg) detected in foods in Q3 of 2016 NZTDS, reported to two decimal places. Foods with no reported residues are not listed.

Food	Auckland	Christchurch	Dunedin	Napier
Onions	ND	0.03	ND	ND
Potatoes, hot chips	ND	0.02	ND	ND