New Zealand Food Safety
Haumaru Kai Aotearoa

National Programme for the Monitoring and Surveillance of Chemical Residues and Contaminants in Milk

Plan for 1 July 2019 to 30 June 2020

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1 Preamble

Dairy monitoring and surveillance programmes for substances of interest have been in operation in New Zealand for many years and a national programme for the monitoring of raw milk was introduced in the 1996/97 dairy season. Since that time the programme has become an official programme under the Dairy Industry (National Residue Monitoring Programme) Regulations 2002. It is administered by New Zealand Food Safety (NZFS).

New Zealand's dairy monitoring and surveillance programme is better known as the National Chemical Contaminants Programme (NCCP) and is designed to confirm the effectiveness of the regulatory controls in place for ensuring residues and contaminants in milk and manufactured dairy products do not pose a threat to human health; that Good Agricultural Practices (GAP) are being followed; and that relevant importing country requirements will be met. In addition, surveys are undertaken as necessary to identify new or emerging risk factors, or enhance the understanding of potential issues and natural background levels for minor components that naturally occur in milk.

The monitoring programme is regarded as confirmation that controls are working effectively and as such it serves as a verification measure and not a primary control measure. The programme is designed to identify where controls may not be working and enable an appropriate investigation to be undertaken to determine the root cause and establish options to correct the situation.

Regulatory response to identified 'control failures' is aimed at motivating not just the individual farmer or dairy processor directly concerned, but the whole sector responsible for the particular control so that the required adjustments can be applied on a national basis if necessary.

The particular substances monitored, the number of samples to be analysed and the sampling pattern have been determined following consideration of factors relevant to New Zealand dairy production practices. Due consideration has been given to previous monitoring results which have so far indicated that the current controls have been effective in ensuring residues and contaminants in dairy products conform to regulatory limits.

The level of monitoring to some extent also reflects the severity of sanctions currently applied. In New Zealand, dairy risk management programme (RMP) operators apply severe penalties when milk supplies are found to contain residues and contaminants above regulatory limits and NZFS applies strict rules concerning traceback and corrective actions. Additionally, NZFS has a strict process for managing any dairy material or product that is determined to contain unacceptable residues or contaminants.

The substantial analysis undertaken per sample enables New Zealand to provide assurances that GAP is being followed and that regulatory limits are met under the New Zealand regulatory framework.

2 Sampling plan

Consistent with Codex Alimentarius guidelines, New Zealand applies a scientifically and statistically justified, risk-based approach to monitoring residues and contaminants in raw milk.

The programme consists of three parts, random monitoring, directed surveillance and surveys. The monitoring programme is a non-biased sampling programme and is designed to provide profile information on the occurrence of residues and contaminants in raw milk on a national basis.

Unless otherwise stated, sampling under the raw milk random monitoring component is directly from the farm bulk milk tank prior to consolidation or dilution through the collection and manufacturing processes. This ensures that GAP is monitored as well as conformance of each farm to residue and contaminant regulatory limits. This also enables action to be taken should a non-conformance be identified.

When taking surveillance and survey samples of raw milk, colostrum or other dairy material within the scope of the programme, the samples are collected from the most relevant point, taking into consideration the purpose of the surveillance or survey activity.

2.1 STATISTICAL CONFIDENCE

New Zealand uses statistically-based sample sizes. In the raw milk monitoring component of the NCCP, the number of samples taken is generally aligned with that required to provide 95% confidence of being able to detect an incidence of non-compliance in the sampled population of 1% or greater. This means that a minimum of 300 official random monitoring samples will be taken each year for analysis of the core substances monitored. This minimum covers all cow herds producing milk eligible for export (over 99% of New Zealand dairy farms). Additional samples are taken on a proportional basis for other species as well as bovine domestic milk.

For substances with a proven history of conformance fewer samples may be collected each season, with ongoing conformance assessed over multiple seasons. For surveys, a smaller number of samples will typically be taken.

2.2 SAMPLE NUMBERS

A minimum of 306 random monitoring samples will be taken under the NCCP during the 2019/20 dairy season, comprising 300 random samples of bovine raw milk eligible for export and 6 random samples of milk from other species. There will also be additionally 5 directed colostrum samples. In total more than 160,000 individual test results will be reported and reviewed.

Monitoring under the New Zealand programme is equivalent to 1 sample per 37 herds.

These figures do not take into account the additional samples of processed dairy products that are collected and tested.

Table 1: Farm production 2017-18 (source: New Zealand Dairy Statistics 2017-18)

	Production figures
Annual milk production	20,724 million litres
Number of dairy herds	11,590
Litres/farm/season	1,788,051
Average milking animals/farm	431

For 2019/20 the core programme consists of more than 500 compounds screened on each routine sample collected. Additional compounds are tested at a lower frequency due to the nature of the compound, its use, and potential for contamination of milk. Section 2.5 sets out the rationale for the compounds and frequency selected.

2.3 RANDOM MONITORING & SEASONAL DISTRIBUTION

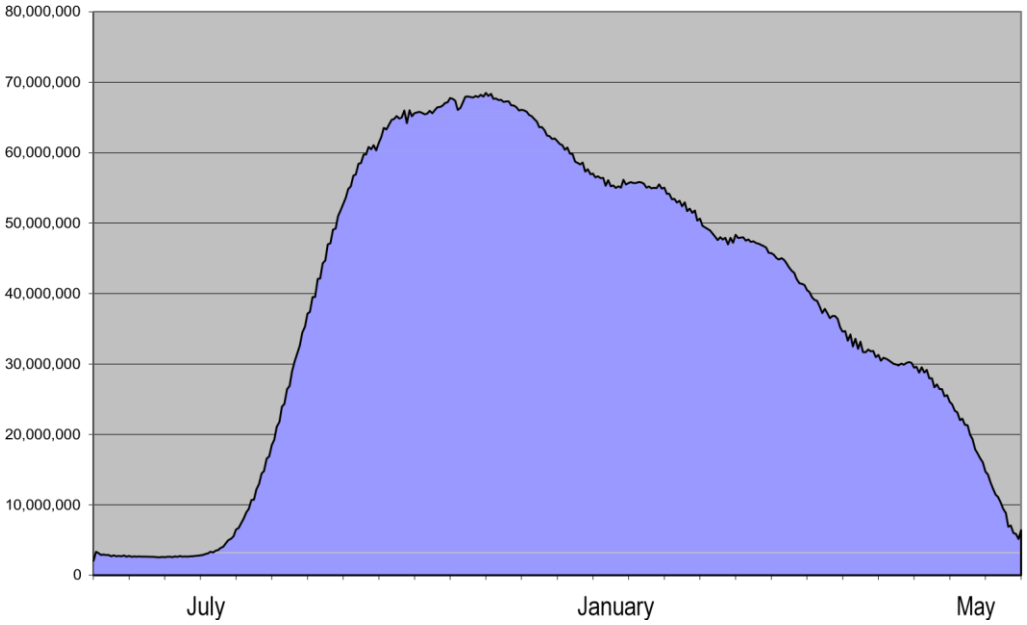
All random raw milk sampling occurs at the farm bulk milk tank unless otherwise stated and as such monitors the conformance of individual milk producers.

Dairy farming in New Zealand is pasture-based and the milk production pattern is seasonal, following a similar curve to that of pasture production. Accordingly the NCCP operates on a July 1st to June 30th production year.

Figure 1 illustrates the milk supply curve across the dairy season, with approximately 93% of milk produced between August 20th and April 30th each season. A significant proportion of the milk supplied in the period May 1st to August 19th is intended for domestic consumption (as liquid milk and chilled dairy products). None-the-less a small number of NCCP raw milk samples will be obtained over this period.

Raw milk intended for the commercial production of dairy products is derived predominantly from the approximately 5 million lactating cows, as well as a small number from other species. Under the NCCP all species are included for sampling on a proportional basis.

Figure 1: New Zealand Milk Supply Curve



2.4 DIRECTED (TARGETED) SURVEILLANCE

The surveillance component of NCCP is designed to investigate and assess the conformance of dairy material deemed to be of higher risk based on the risk profile of either the producer, the process or the material which is considered in relation to particular chemical hazards. Targeted sampling is undertaken on the basis of the risk associated with the compound, the existing level of management control and the likelihood of non-conformance based on information available to NZFS through reports, non-conformance, audits and investigations. For 2019/20 targeted sampling will be directed to a minimum of 5 colostrum supplies taken at the farm as this continues to be seen as an indicator for residue carryover from treatments and exposures that may have occurred at drying off and/or over the dry period.

2.5 DETERMINATION OF COMPOUNDS TO BE SCREENED

As NCCP is risk-based, the compounds to be analysed in the monitoring programme are dependent upon the risk profile for the particular compound and the most appropriate target compound, marker or metabolite for screening purposes. The compounds to be screened are confirmed following annual review, but may be amended during the season in response to findings, emerging trends or international concerns.

Factors taken into account for any one compound include:

- good agricultural and veterinary practices, including animal husbandry;
- extent and pattern of use of the chemical (including risk prone times);
- programmes or controls in place to mitigate the risk of milk becoming affected by chemical hazards;
- toxicological significance of the substance;
- potential for misuse or abuse;
- exposure routes, including feed, environment and evolving farming practices;
- persistence in the environment (including risk prone areas);
- previous monitoring frequencies and findings (across NZFS, industry programmes and international monitoring);
- availability of a practical, validated analytical method and under scope of accreditation;

- emerging substances of growing interest;
- international concern for residues of the compound, and;
- regulatory requirements of international markets.

Substances which are of interest to importing countries may be included where appropriate, irrespective of whether there is any evidence or likelihood of use or abuse in New Zealand.

2.6 ACTION LIMITS

Action limits are established for all residues and contaminants of primary interest in the programme. Where Maximum Residue Limits (MRLs) have been set for residues of agricultural compounds and veterinary medicines, or Maximum Limits (MLs) have been set for other contaminants, the action limit is typically set at the lowest value applied under New Zealand, Codex, and importing country MRLs. Where a compound is not registered or not permitted for use on milking animals, the action limit is typically set at either the minimum limit of reporting (LoR), or the limit of detection (LoD). Some compounds are included even though the test method may not detect down to the lowest MRL or ML applied by Codex or an importing country when the result is able to alert NZFS to the non-conformance at farm level and/or below action limits, as it will still enable the conformance of milk at delivery to the processing premises to be assessed.

For compounds or chemical elements naturally occurring in raw milk, action limits are set to identify unexpected levels that warrant further investigation.

3 Inclusion of compounds in the 2019/20 NCCP

The following sets out the rationale used when giving consideration for the inclusion of compounds in the 2019/20 NCCP. Additional compounds of interest to New Zealand will be included based on the rationale set out under section 2.5. Lastly, further compounds of lower direct interest are included when multi-residue screening methods are employed. As this last category includes a large number of compounds it serves to provide further confidence that GAP is being applied under New Zealand dairy farming conditions.

During the 2010/11 production season a multi-residue pesticide screen using LC-MS/MS was added to the programme to supplement the GC-MS multi-residue screen historically utilised. For some compounds there will be an overlap with both methods measuring the same compound, but by including both methods, the range of compounds being monitored has increased significantly.

The full list of compounds to be included in the NCCP is provided in section 3.3. For 2019/20 the programme will monitor more than 500 compounds across a range of compound groups. This is similar to recent seasons and represents a 7 fold increase in the number of compounds monitored under the programme since 2002.

3.1 SUBSTANCES HAVING AN ANABOLIC EFFECT & UNAUTHORISED USE (EU GROUP A)[1]

The New Zealand National Chemical Residues Programme (NCRP) for live and slaughtered animals includes screening for trenbolone, stilbenes, steroidal substances and β-agonists. Due to the absence of findings in all animals including dairy animals, the following substances are not deemed to represent a risk in New Zealand dairy material and as such are generally not included in the routine monitoring programme for 2019/20:

- stilbenes, stilbene derivatives, and their salts and esters;
- antithyroid agents;
- steroids;
- resorcyclic acid lactones including zeranol, and;

[1] COUNCIL DIRECTIVE 96/23/EC of 29 April 1996 on measures to monitor certain substances and residues thereof in live animals and animal products (Annex 1)

- β-agonists.

Compounds for which an MRL cannot be set

Chloramphenicol: Registration of chloramphenicol was withdrawn for food-producing animals in 1988. There are no veterinary medicines containing chloramphenicol registered for use in New Zealand, and its use on food-producing animals is not permitted.

Misuse on dairy animals in New Zealand is therefore considered highly unlikely. None-the-less, due to concerns of illegal use of the compound in other countries, chloramphenicol has been included in the NCCP since its inception. For 2019/20, at least 300 random samples will be tested for phenicols.

Use of **chloroform** as an excipient in products was terminated in 2000/01. Immediately prior to this, all products were either reformulated to remove chloroform or the licence was cancelled. It is not anticipated that chloroform will be monitored by the NCCP for 2019/20 but it will be considered in future production years.

Nitrofurans: There are currently no New Zealand registered products containing furazolidone. Nitrofurazone is only registered in one veterinary medicine, as a treatment for ornamental fish. It is a legal requirement that this product is not to be used on any animal producing, or intended to produce food for human consumption, and this is stated clearly on the label.

Monitoring of the parent compounds nitrofurazone, furazolidone and furaltadone were included in the NCCP until 2005. However, due to international interest, analyses of the nitrofuran metabolites semicarbazide (SEM), 3-amino-2-oxazolidinone (AOZ), 5-methylmorpholino-3-amino-2-oxazolidinone (AMOZ) and 1-aminohydantoin (AHD) were developed and validated for milk and have been included in the programme since 2004/05. For 2019/20, at least 300 random samples will be tested for nitrofuran metabolites.

While there is debate regarding the specificity of these metabolites, in particular semicarbazide (SEM) which has been shown to be present from sources other than nitrofurazone, screening for these metabolites other than semicarbazide is considered to be more reliable than analysis for the parent drugs which are less stable. Screening for semicarbazide is currently considered more convenient than screening for the parent nitrofurazone with a less sensitive method. A more sensitive method is being developed for milk and dairy products and may be introduced once validated.

Because of the status of the nitrofurans (no registered use for dairy cattle) any detection of a metabolite in the absence of the parent drug will initiate immediate traceback procedures to determine whether abuse has occurred. Again, it is specifically noted that semicarbazide will only be used as a trigger for further investigation and on its own is not a conclusive indicator of non-conformance.

Chlorpromazine, colchicine and **dapsone** are not registered for use in New Zealand, and there are no indications for their use. Consequently chlorpromazine, colchicine and dapsone are not included in the NCCP for 2019/20 but may be included in future seasons.

Aristolochia species and preparations containing these botanicals have no intentional use on milking animals and as such will not be monitored by the NCCP in 2019/20, but a small number of organic milk samples may be considered for inclusion under directed surveillance in future seasons.

3.2 VETERINARY MEDICINES & CONTAMINANTS (EU GROUP B)

B1 Antibacterial substances, including sulphonamides and quinolones: The typical dairy farming profile for New Zealand features cows grazed outdoors on pasture all year round, and not permanently housed or held off pasture during lactation, and generally not fed concentrates at levels of significance. They are therefore not exposed to the same level or types of veterinary medicines that are associated with these more intensive husbandry practices. It is noted that that there has been a trend toward increased use of supplementary feed, especially imported feed, and these will be assessed as a potential source for residues, contaminants and fungal toxins.

The New Zealand national dairy herd has a relatively low level of mastitis and when it occurs, treatment with antibiotics during lactation is only one of the control methods advocated in the

'SmartSAMM' programme'[2] (Seasonal Approach to Managing Mastitis, published by DairyNZ). Mastitis treatments in New Zealand are typically restricted veterinary medicines and are under the control of a veterinary professional.

Dairy manufacturers maintain an intensive level of acceptance testing of raw milk, with both screening of tankers and post acceptance testing of individual farm supplies. The 'DPC2: Animal Products (Dairy) Approved Criteria for Farm Dairies'[3] requires that RMP operators test milk from each farm at least three times per month using an approved Inhibitory Substances (antimicrobial) method. The action level for farm bulk milk supplies is set at the limit of detection of the test, 0.003 IU (1.8 ppb) sodium (or potassium) benzyl penicillin or equivalent per ml, a very stringent standard in comparison with other international authorities.

Should a non-conformance be identified, RMP operators are required to apply rigorous follow-up procedures including farm traceback and financial penalties, and these have been shown to achieve a very high level of conformance based on the extensive testing nationally. All manufactured product is also required to be traced in the event of a raw milk non-conformance.

Over the 2019/20 season the dairy industry is expected to undertake some 950,000 raw milk residue tests, including approximately 500,000 antimicrobial (inhibitory substance) tests on individual farm milk supplies, and 450,000 β-lactam tests on tanker milk prior to unloading at the receiving factory.

In addition to this dairy industry routine monitoring, the NCCP will continue to screen individual farm milk supplies for evidence of a range of antimicrobial compounds including penicillins, cephalosporins, aminoglycosides, macrolides, sulphonamides and tetracyclines. Testing under the NCCP includes testing for inhibitory substances, via a four plate microbial inhibition test (coded as MIT) or Delvotest T. Tetracyclines can be tested by an enzyme-linked receptor-binding assay test (coded as SNAP). For 2019/20, at least 300 random samples will be tested for each of these.

B2 (a) Anthelmintics: The NCCP will continue to screen a proportion of milk supplies for benzimidazoles, levamisole and macrocyclic lactones. For 2019/20, 155 random samples will be tested for anthelmintics.

B2 (b) Anticoccidials, including **nitroimidazoles**: Due to the outdoor pastoral farming system in New Zealand dairy production, nitroimidazole compounds are not indicated for use and are not usually included in the NCCP.

One Dimetridazole product is currently registered and is restricted to on-label use only in poultry and pigs under veterinary supervision. This means it is illegal to use in species other than poultry and pigs, and illegal to use in any species without veterinary authorisation in any other species. Also, New Zealand's extensive pasture-based husbandry practices would make its use in dairy cattle highly improbable and exposure is unlikely.

Metronidazole is currently registered exclusively for the treatment of bacterial infections in cats and dogs and only available in tablet form suitable for those species. Its use in dairy cattle would also be highly improbable given the impracticality of dosing with companion animal products.

Ronidazole is registered for use in New Zealand in cage birds and is only available as a water-soluble formulation in drinking water. Its concentration and form would not be a practical treatment option in dairy cattle. Dimetridazole, metronidazole and ronidazole are not included in the NCCP for 2019/20 but may be considered for inclusion in future seasons.

Other anticoccidials are used, and screening for ionophores has been undertaken periodically. For 2019/20, 60 random samples will be tested for a range of anticoccidials.

B2 (c) Carbamates and pyrethroids: The risk of contamination by synthetic pyrethroids in New Zealand milk is low due to the extensive pastoral grazing-based animal husbandry system. For 2019/20, at least 300 random samples will be tested for synthetic pyrethroids.

[2] https://www.dairynz.co.nz/media/443185/smartsamm_brochure.pdf

[3] https://www.mpi.govt.nz/dmsdocument/10148-dpc-2-animal-products-dairy-approved-criteria-for-farm-dairies

Carbamates have been superseded by other veterinary medicines in New Zealand and are currently only registered for topical use in food-producing animals. However, New Zealand's screening methodology for organophosphates is sensitive to these compounds and any non-conforming results will be actively followed up. Additional surveillance samples for either group will be taken where considered appropriate.

B2 (d) Sedatives: The potential for these compounds to be present in milk is very low. Xylazine is registered for use in dairy cattle as a sedative. It is a restricted veterinary medicine that requires a veterinarian to authorise and oversee use. These are not included in the NCCP for 2019/20.

B2 (e) Non-steroidal anti-inflammatory drugs (NSAIDs): The extensive nature of New Zealand's farming systems and the expense of non-steroidal anti-inflammatory drugs relative to the value of the animals and their restricted veterinary medicine status does not justify extensive use of these products. None-the-less, NSAIDs have been included in the NCCP for a number of years. For 2019/20, 155 random samples will be tested for a range of NSAIDs.

B3 (a) Organochlorine compounds: Consistent with previous years, organochlorines will be included in the 2019/20 programme with at least 300 random samples tested. This is primarily to continue monitoring the slow environmental decay of these compounds.

None of the original 12 organochlorines listed under the Stockholm Convention on Persistent Organic Pollutants have been registered or used in New Zealand for a number of years. The sale of dieldrin for use on food-producing animals and or pasture was banned in 1967. In 1970, New Zealand became one of the first countries in the world to ban the use of DDT on pastoral land. However, the metabolites of DDT continue to be periodically identified in milk and milk products from livestock grazing land where DDT was historically applied to control "grass grub" (*Costelytra zealandica*). Residues of DDE, rather than the parent compound DDT, predominate confirming historic rather than recent use of this pesticide in New Zealand.

NCCP will continue to monitor milk from animals from areas where this compound was historically used. In addition, farm dairy RMP operators are required to manage the risks under their programmes and where necessary, to provide practical information on management techniques to minimise the uptake of the metabolites by milking animals.

New Zealand is not heavily industrialised and so the risk of **dioxin or dioxin-like PCBs** entering the milk supply is very low. This has been confirmed in historic surveys. None-the-less surveys targeting either high fat dairy products or milk from farms deemed most likely to be at risk are undertaken intermittently. For 2019/20 a small number of samples will be included in a separate survey. Dioxins and dioxin-like PCBs are not included in Table 2: NCCP Raw Milk Monitoring - List of Compounds 2019/20.

B3 (b) Organophosphorus compounds: These classes of compounds, registered as veterinary medicines, are used primarily for ectoparasite control in food-producing animals. Organophosphates are very unlikely to occur as residues in New Zealand milk because animal feeds, which may be treated with organophosphate insecticides, typically represent a very small proportion of the animals diet due to the traditional pasture based grazing systems used for dairy cows. In addition, relatively few cows are housed in barns which might require insecticide treatment. For 2019/20, at least 300 random samples will be tested for organophosphate compounds.

B3 (c) Chemical elements: Given the relatively low level of industrialisation in New Zealand there is little heavy metal contamination within the environment. As milking cows graze pasture and receive relatively small quantities of feed from external sources, it has been unlikely for contamination to occur through the feed supply. However feeding patterns have been changing with a move to utilising crops and various imported feeds. Accordingly, the NCCP monitors trends for all of the chemical elements as part of the consideration to the potential hazards that might carry through into the milk from various possible farming activities including feed.

For 2019/20, at least 300 random samples will be tested for arsenic, cadmium, lead and mercury as well as a range of other elements.

Dairy products that are manufactured using ingredients or additives may contain metals at greater levels than that allowed for, or expected in raw milk. These other elements are assessed for

conformance in conjunction with the relevant RMP operator, as well as processing concentration factors and partitioning within milk component streams.

B3 (d) Mycotoxins: Aflatoxin M1 in milk is a consequence of milking animals consuming feed that is contaminated with aflatoxin B1. New Zealand pasture, conserved feed, grains and concentrates are very unlikely to contain aflatoxin B1. Year-round climatic conditions ensure that pasture grazing will continue to be the predominant feed supply for New Zealand dairy cows in the medium term. Conserved pasture, hay and silage are traditionally the most commonly supplementary animal feeds. These are harvested on each farm from surplus grass growth during the high growth periods in the spring and early summer (November to January).

Imported plant material such as palm kernel expeller, and to a lesser extent distillers dried grains with solubles, soybean meal and other high carbohydrate feed, has become more significant over recent years.

Because of the growth in use of imported feeds the 2019/20 NCCP will test for aflatoxin M1 in all monitoring samples. For 2019/20, 300 random samples will also be tested for mycotoxins.

B3 (e) Dyes: As these substances are of low risk they are not included in the NCCP for 2019/20.

B3 (f) Other Contaminants

Radionuclides: New Zealand dairy products are routinely monitored for radionuclide contamination in conjunction with the national survey undertaken by the National Radiation Laboratory. Monitoring includes Iodine-131, Caesium-134 and Caesium-137, Plutonium-239/240, Americium-241 and Strontium-90. Additional radionuclide testing may also be undertaken according to the requirements of particular markets. Radionuclides are not included in Table 2: NCCP Raw Milk Monitoring - List of Compounds 2019/20.

Melamine: This sampling plan has been reviewed and updated in response to the 2008 melamine adulteration situation reported by authorities in China, the subsequent review of toxicological data by various authorities internationally, and the acceptance thresholds established by NZFS, Codex and other competent authorities. The sampling plan incorporates melamine solely in response to the current global interest in melamine.

The likelihood of milk in New Zealand being adulterated with melamine for financial gain is extremely low as there is no local source of melamine or melamine waste, and advances in routine milk composition testing would identify an anomaly. Adulteration of raw milk in New Zealand is prohibited and severe penalties apply. Testing under the NCCP has been introduced to confirm the safety and suitability of the national raw milk supply and the dairy products manufactured in New Zealand. A number of additional controls also exist within the regulatory framework to ensure that adulteration or contamination of any kind does not occur.

These controls include:

- Independent assessment (audit) of every farm dairy at least once per season, a proportion of unannounced farm dairy assessments, and verification audits of processing activities from farm through to sale or export. This includes milk factories, stores, transport of milk or product, and milk transfer facilities;
- Direct and exclusive contractual relationship between the farm and the processor with the processor typically responsible for the collection of milk from each individual farm. Rejected consignments and/or farms under any form of sanction have no other disposal option so all farmers have a very strong commercial incentive to meet the stringent milk integrity parameters set by processors and NZFS;
- Minimum raw milk monitoring criteria set by NZFS, and raw milk acceptance criteria set by both NZFS and processors that cover residues and contaminants, microbial parameters, abnormalities and wholesomeness;
- The existence of severe economic disincentives. In the event of any non-conforming level of any contaminant or misrepresentation of raw milk severe penalties are applied by the milk recipients;

- Enforcement action such as prosecution procedures or other sanctions may be initiated by NZFS for any illegal activity and NZFS has the legal power to direct that any milk or dairy product suspected to be affected be withdrawn or recalled from trade.

Analysis for melamine will be included, but at a reduced frequency for 2019/20 due to the favourable results obtained since testing was introduced in 2008, and the absence of risk factors within the New Zealand milk production environment. For 2019/20, 60 random samples will be tested for melamine.

Phthalates: Testing of raw milk and dairy products for phthalates was introduced in the 2011/12 dairy season following reports of deliberate adulteration of food ingredients in Asia. No New Zealand milk or dairy product was affected.

The phthalate DEHP was known to have been included in the formulation of milk liners, a rubberware item used during milking to provide the required flexing of the component. However DEHP was found to migrate into milk products at low levels, and was consequently removed from use in the formulation of rubber components for the milking plant.

Monitoring for phthalates in dairy products will continue to be undertaken periodically. For 2019/20, 60 random samples will be tested for phthalates.

Quaternary Ammonium Compounds: Quaternary Ammonium Compounds (QACs) are widely used as surfactants and disinfectants in food processing and several products have been approved for sanitising dairy equipment. More recently QACs have become compounds of interest in some markets, with studies suggesting that residues may carry over in many food products exposed to QACs. This presents an added complication for trade as many dairy products are highly concentrated ingredients, and these concentrated forms usually only represent a minor portion of the final food. For a number of years dairy maintenance compounds containing QACs have been approved in New Zealand with the condition that milk contact surfaces are to be rinsed after use. As such elevated residue levels in milk are not expected, and NZFS reviews to date suggest that milk and dairy products never contain QAC residues at levels that might pose a public health risk. For 2019/20, 60 random samples will be tested for QACs.

Dicyandiamide: Dicyandiamide (DCD) is a nitrification inhibitor that has the potential to greatly assist pastoral farming by reducing nitrogen loss to the environment and reducing the production of greenhouse gases when applied to pastoral land. However late 2012, as the use of DCD increased, NZFS became aware that minor traces of the compound were becoming detectable in concentrated dairy products.

While the levels identified were of absolutely no risk to any consumers of dairy products, there is no agreed international position on residues from the use of DCD. Consequently the use of DCD on land for pastoral farming has ceased and will not be permitted until such time as a maximum residue limit has been agreed internationally. For 2019/20, 60 random samples will be tested for DCD.

Sodium Monofluoroacetate (1080): In response to a criminal blackmail threat in November 2014, NZFS and New Zealand dairy manufacturers undertook significant testing of raw milk, intermediate products and ingredients and final products for 1080 to confirm with certainty that 1080 was not present in New Zealand raw milk, milk products or formulated milk products for infants and young children. This provided assurance to other Competent Authorities that control measures for the chemical 1080 in New Zealand were, and are appropriate and effective. For 2019/20, 60 random milk samples will be tested for 1080.

Bismuth: Bismuth is an inert compound used in teat sealants when cows are dried off at the end of lactation. Teat sealant products have been shown to be highly effective in minimising mastitis incidence during the dry period which, in turn, means that there is less reliance on antibiotic treatments during the early stages of lactation. The action limit for bismuth is well below any food safety threshold and is in place to monitor agricultural practice.

Anticoagulant Rodenticides: Anticoagulant rodenticides are used worldwide in pest control. Rodenticides have been monitored as part of the NCRP since 1999. Under the NCRP, animals supplied to slaughter are randomly selected for sampling and testing using an accredited method for animal tissue. There is no accredited method for these compounds in milk and testing is currently not included in the NCCP for 2019/20.

Detergents: Actives such as nonylphenol and nonylphenol ethoxylates and linear alkylbenzene sulphonates are typically used as detergents as part of the cleaning process in milking areas. NZFS will continue to assess the risk to public health or trade that these compounds might pose. These actives are currently not included in the NCCP for 2019/20.

Surveys: These are undertaken as necessary to identify new or emerging risk factors or enhance the understanding of potential issues and natural background levels for minor components that naturally occur in milk.

3.3 COMPOUNDS TO BE MONITORED IN 2019/20

The following tables set out the full list of compounds and chemical elements intended to be monitored under the programme in 2019/20 for raw milk.

Table 2: NCCP Raw Milk Monitoring – List of Compounds 2019/20

Compound	Matrix	Samples to test	Action limit (mg/kg)	LoR (mg/kg)	Method	Code**
(E)-Metominostrobin	Milk	306	0.01	0.002	LC-MS/MS	P
(E)-Pyriminobac-methyl	Milk	306	0.01	0.002	GC-MS/MS	P
(Z)-Metominostrobin	Milk	306	0.01	0.002	LC-MS/MS	P
(Z)-Pyriminobac-methyl	Milk	306	0.01	0.002	GC-MS/MS	P
1,2,3,6-Tetrahydrophthalimide	Milk	306	0.01	0.002	GC-MS/MS	P
2-Aminoflubendazole+	Milk	155	0.1	0.002	LC-MS/MS	AN
2-Phenylphenol	Milk	306	0.01	0.002	GC-MS/MS	P
5-Hydroxyflunixin	Milk	155	0.04	0.002	LC-MS/MS	NS
5-Hydroxyimidacloprid	Milk	306	0.01	0.005	LC-MS/MS	P
5-Hydroxymebendazole	Milk	155	0.002	0.002	LC-MS/MS	AN
Abamectin	Milk	306	0.002	0.002	LC-MS/MS	P
Abamectin	Milk	155	0.003	0.003	LC-MS/MS	AN
Acephate	Milk	306	0.01	0.002	LC-MS/MS	P
Acetamiprid	Milk	306	0.1	0.002	LC-MS/MS	P
Acetamiprid-N-desmethyl	Milk	306	0.01	0.002	LC-MS/MS	P
Acetochlor	Milk	306	0.01	0.002	GC-MS/MS	P
Acibenzolar-S-methyl	Milk	306	0.01	0.005	LC-MS/MS	P
Acrinathrin	Milk	306	0.01	0.002	GC-MS/MS	P
Aflatoxin M1	Milk	60	0.05 µg/kg	0.010 µg/kg	UHPLC	AF
Aflatoxin M1	Milk	306	0.05 µg/kg	0.005 µg/kg	LC-MS/MS	AF
AHD (1-aminohydantoin)	Milk	306	0.0003	0.0003	LC-MS/MS	N
Alachlor	Milk	306	0.01	0.002	GC-MS/MS	P
Alanycarb	Milk	306	0.01	0.002	LC-MS/MS	P
Albendazole sulfone+	Milk	155	0.1	0.001	LC-MS/MS	AN
Albendazole sulfoxide+	Milk	155	0.1	0.001	LC-MS/MS	AN
Albendazole+	Milk	155	0.1	0.001	LC-MS/MS	AN

Compound	Matrix	Samples to test	Action limit (mg/kg)	LoR (mg/kg)	Method	Code**
Albendazole-2-aminosulfone+	Milk	155	0.1	0.004	LC-MS/MS	AN
Aldicarb	Milk	306	0.01	0.01	LC-MS/MS	P
Aldicarb sulfoxide	Milk	306	0.01	0.002	LC-MS/MS	P
Aldoxycarb	Milk	306	0.01	0.002	LC-MS/MS	P
Aldrin	Milk	306	0.006	0.002	GC-MS/MS	P
Allidochlor	Milk	306	0.01	0.005	GC-MS/MS	P
alpha-Endosulfan	Milk	306	0.01	0.002	GC-MS/MS	P
alpha-HCH	Milk	306	0.01	0.002	GC-MS/MS	P
Aluminium	Milk	306	1	0.1	Acid digest/ICP-MS	EL
Ametoctradin	Milk	306	0.01	0.002	LC-MS/MS	P
Ametryn	Milk	306	0.01	0.002	GC-MS/MS	P
Amoxicillin	Milk	306	0.004	0.0015	MIT	IS
AMOZ (5-methylmorpholino-3-amino-2-oxazolidinone)	Milk	306	0.0001	0.0001	LC-MS/MS	N
Ampicillin	Milk	306	0.004	0.002	Delvotest T*	IS
Ampicillin	Milk	306	0.004	0.0015	MIT	IS
Anilofos	Milk	306	0.01	0.002	GC-MS/MS	P
Anthraquinone	Milk	306	0.01	0.002	GC-MS/MS	P
AOZ (3-amino-2-oxazolidinone)	Milk	306	0.0001	0.0001	LC-MS/MS	N
Arsenic	Milk	306	0.01	0.001	TMAH Digestion/ICP-MS	EL
Atrazine	Milk	306	0.01	0.002	GC-MS/MS	P
Azaconazole	Milk	306	0.01	0.002	GC-MS/MS	P
Azamethiphos	Milk	306	0.01	0.002	LC-MS/MS	P
Azinphos-methyl	Milk	306	0.01	0.002	GC-MS/MS	P
Azoxystrobin	Milk	306	0.01	0.002	GC-MS/MS	P
Benalaxyl	Milk	306	0.01	0.002	GC-MS/MS	P
Bendiocarb	Milk	306	0.01	0.002	GC-MS/MS	P
Benfluralin	Milk	306	0.01	0.002	GC-MS/MS	P
Benodanil	Milk	306	0.01	0.002	GC-MS/MS	P
Benoxacor	Milk	306	0.01	0.002	GC-MS/MS	P
Bensulfuron-methyl	Milk	306	0.01	0.002	LC-MS/MS	P
Bensulide	Milk	306	0.01	0.002	LC-MS/MS	P
Benzyl butyl phthalate (BBP)	Milk	60	1	0.01	GC-MS/MS	Pht
Benzyldimethyldecylammonium chloride (BDM-C10)	Milk	60	0.1	0.01	LC-MS/MS	QAC
Benzyldimethyldodecylammonium chloride (BDM-C12)	Milk	60	0.1	0.01	LC-MS/MS	QAC

Compound	Matrix	Samples to test	Action limit (mg/kg)	LoR (mg/kg)	Method	Code**
Benzyldimethylhexadecylammonium chloride (BDM-C16)	Milk	60	0.1	0.01	LC-MS/MS	QAC
Benzyldimethyloctadecylammonium chloride (BDM-C18)	Milk	60	0.1	0.01	LC-MS/MS	QAC
Benzyldimethyltetradecylammonium chloride (BDM-C14)	Milk	60	0.1	0.01	LC-MS/MS	QAC
Benzylpenicillin	Milk	306	0.004	0.002	Delvotest T*	IS
Benzylpenicillin	Milk	306	0.004	0.0004	MIT	IS
beta-Endosulfan	Milk	306	0.01	0.002	GC-MS/MS	P
beta-HCH	Milk	306	0.01	0.002	GC-MS/MS	P
Betamethasone	Milk	60	0.0003	0.0003	LC-MS/MS	D
Bifenox	Milk	306	0.01	0.002	GC-MS/MS	P
Bifenthrin	Milk	306	0.1	0.002	GC-MS/MS	P
Bioresmethrin	Milk	306	0.01	0.002	GC-MS/MS	P
Bismuth	Milk	306	0.5	0.001	Acid Digest/ICP-MS	EL
Bitertanol	Milk	306	0.05	0.002	GC-MS/MS	P
Boron	Milk	306	1	0.05	Acid digest/ICP-MS	EL
Boscalid	Milk	306	0.02	0.002	LC-MS/MS	P
Bromacil	Milk	306	0.01	0.002	GC-MS/MS	P
Bromobutide	Milk	306	0.01	0.002	GC-MS/MS	P
Bromophos	Milk	306	0.01	0.002	GC-MS/MS	P
Bromophos-ethyl	Milk	306	0.01	0.002	GC-MS/MS	P
Bromopropylate	Milk	306	0.01	0.002	GC-MS/MS	P
Bupirimate	Milk	306	0.05	0.002	GC-MS/MS	P
Buprofezin	Milk	306	0.01	0.002	GC-MS/MS	P
Butachlor	Milk	306	0.01	0.002	GC-MS/MS	P
Butafenacil	Milk	306	0.01	0.002	GC-MS/MS	P
Butamifos	Milk	306	0.01	0.002	GC-MS/MS	P
Cadmium	Milk	306	0.1	0.0004	Acid digest/ICP-MS	EL
Cadusafos	Milk	306	0.01	0.002	GC-MS/MS	P
Cafenstrole	Milk	306	0.01	0.002	LC-MS/MS	P
Carbaryl	Milk	306	0.01	0.002	GC-MS/MS	P
Carbendazim	Milk	306	0.01	0.002	LC-MS/MS	P
Carbetamide	Milk	306	0.01	0.002	LC-MS/MS	P
Carbofuran*	Milk	306	0.001	0.002	GC-MS/MS	P
Carboxin	Milk	306	0.01	0.002	GC-MS/MS	P
Carfentrazone-ethyl	Milk	306	0.01	0.002	GC-MS/MS	P

Compound	Matrix	Samples to test	Action limit (mg/kg)	LoR (mg/kg)	Method	Code**
Carprofen	Milk	155	1	0.005	LC-MS/MS	NS
Carpropamid	Milk	306	0.01	0.002	LC-MS/MS	P
Cefalexin	Milk	306	0.1	0.012	MIT	IS
Cefalonium	Milk	306	0.02	0.008	MIT	IS
Cefalonium	Milk	306	0.02	0.02	Delvotest T*	IS
Ceftiofur	Milk	306	0.1	0.008	MIT	IS
Cefuroxime	Milk	306	0.1	0.016	MIT	IS
Chloramphenicol	Milk	306	0.0001	0.0001	LC-MS/MS	A6
Chlorantraniliprole	Milk	306	0.05	0.002	LC-MS/MS	P
Chlorfenapyr	Milk	306	0.01	0.005	GC-MS/MS	P
Chlorfenvinphos	Milk	306	0.01	0.002	GC-MS/MS	P
Chloridazon	Milk	306	0.1	0.002	LC-MS/MS	P
Chlorimuron-ethyl	Milk	306	0.01	0.002	LC-MS/MS	P
Chlorobenzilate	Milk	306	0.1	0.002	GC-MS/MS	P
Chlorotoluron	Milk	306	0.01	0.002	LC-MS/MS	P
Chloroxuron	Milk	306	0.01	0.002	LC-MS/MS	P
Chlorpropham	Milk	306	0.01	0.002	GC-MS/MS	P
Chlorpyrifos	Milk	306	0.01	0.002	GC-MS/MS	P
Chlorpyrifos-methyl	Milk	306	0.01	0.002	GC-MS/MS	P
Chlorsulfuron	Milk	306	0.01	0.005	LC-MS/MS	P
Chlortetracycline	Milk	306	0.01	0.004	MIT	IS
Chlorthal-dimethyl	Milk	306	0.01	0.002	GC-MS/MS	P
Chlorthiophos	Milk	306	0.01	0.002	GC-MS/MS	P
Chlozolinate	Milk	306	0.01	0.002	GC-MS/MS	P
Chromafenozide	Milk	306	0.01	0.002	LC-MS/MS	P
Chromium	Milk	306	0.3	0.003	Acid digest/ICP-MS	EL
Cinidon-ethyl	Milk	306	0.01	0.005	LC-MS/MS	P
cis-Chlordane	Milk	306	0.002	0.002	GC-MS/MS	P
Clethodim	Milk	306	0.01	0.002	LC-MS/MS	P
Clodinafop-propargyl	Milk	306	0.01	0.002	GC-MS/MS	P
Clofentezine	Milk	306	0.01	0.005	LC-MS/MS	P
Clomazone	Milk	306	0.01	0.002	GC-MS/MS	P
Cloquintocet-mexyl	Milk	306	0.01	0.002	GC-MS/MS	P
Clothianidin	Milk	306	0.01	0.005	LC-MS/MS	P
Cloxacillin	Milk	306	0.015	0.015	Delvotest T*	IS
Cobalt	Milk	306	0.1	0.002	Acid digest/ICP-MS	EL
Copper	Milk	306	0.15	0.005	Acid digest/ICP-MS	EL

Compound	Matrix	Samples to test	Action limit (mg/kg)	LoR (mg/kg)	Method	Code**
Coumaphos	Milk	306	0.01	0.002	GC-MS/MS	P
Coumaphos-oxon	Milk	306	0.01	0.002	GC-MS/MS	P
Crufomate	Milk	306	0.01	0.002	GC-MS/MS	P
Cyanazine	Milk	306	0.01	0.002	GC-MS/MS	P
Cyanophos	Milk	306	0.01	0.002	GC-MS/MS	P
Cyantraniliprole	Milk	306	0.01	0.002	LC-MS/MS	P
Cyanuric acid	Milk	60	0.1	0.1	LC-MS/MS	O
Cyazofamid	Milk	306	0.01	0.002	LC-MS/MS	P
Cycloate	Milk	306	0.01	0.005	LC-MS/MS	P
Cyclosulfamuron	Milk	306	0.01	0.002	LC-MS/MS	P
Cyflufenamid	Milk	306	0.01	0.005	GC-MS/MS	P
Cyfluthrin	Milk	306	0.01	0.002	GC-MS/MS	P
Cyhalofop-butyl	Milk	306	0.01	0.002	GC-MS/MS	P
Cyhalothrin	Milk	306	0.05	0.002	GC-MS/MS	P
Cymoxanil	Milk	306	0.01	0.005	LC-MS/MS	P
Cypermethrin	Milk	306	0.01	0.002	GC-MS/MS	P
Cyproconazole	Milk	306	0.01	0.002	GC-MS/MS	P
Cyprodinil	Milk	306	0.01	0.002	GC-MS/MS	P
Cyromazine	Milk	306	0.01	0.002	LC-MS/MS	P
Daimuron	Milk	306	0.01	0.002	LC-MS/MS	P
delta-HCH	Milk	306	0.01	0.002	GC-MS/MS	P
Deltamethrin	Milk	306	0.01	0.002	GC-MS/MS	P
Demeton-S-methyl	Milk	306	0.01	0.002	GC-MS/MS	P
Demeton-S-methyl-sulfoxide	Milk	306	0.01	0.002	LC-MS/MS	P
Desmedipham	Milk	306	0.01	0.005	LC-MS/MS	P
Dexamethasone	Milk	60	0.0003	0.0003	LC-MS/MS	D
Di(2-ethoxyethyl) phthalate (DEEP)	Milk	60	1	0.1	GC-MS/MS	Pht
Di(2-ethylhexyl) adipate (DEHA)	Milk	60	1	0.2	GC-MS/MS	Pht
Di(2-ethylhexyl) phthalate (DEHP)	Milk	60	1	0.2	GC-MS/MS	Pht
Di(2-ethylhexyl) terephthalate (DEHT)	Milk	60	60	0.1	GC-MS/MS	Pht
Di(2-methoxyethyl) phthalate (DMEP)	Milk	60	1	0.1	GC-MS/MS	Pht
Di(2-n-butoxyethyl) phthalate (DBEP)	Milk	60	1	0.1	GC-MS/MS	Pht
Di(4-methyl-2-pentyl) phthalate (BMPP)	Milk	60	1	0.01	GC-MS/MS	Pht
Diallyl phthalate (DAP)	Milk	60	0.01	0.01	GC-MS/MS	Pht
Diazinon	Milk	306	0.02	0.002	GC-MS/MS	P
Dichlobenil	Milk	306	0.01	0.002	GC-MS/MS	P

Compound	Matrix	Samples to test	Action limit (mg/kg)	LoR (mg/kg)	Method	Code**
Dichlofenthion	Milk	306	0.01	0.002	GC-MS/MS	P
Dichlofluanid	Milk	306	0.01	0.01	LC-MS/MS	P
Dichlorvos	Milk	306	0.01	0.002	GC-MS/MS	P
Diclobutrazol	Milk	306	0.01	0.002	GC-MS/MS	P
Diclocymet	Milk	306	0.01	0.002	LC-MS/MS	P
Diclofop-methyl	Milk	306	0.01	0.002	GC-MS/MS	P
Dicloran	Milk	306	0.01	0.002	GC-MS/MS	P
Diclosulam	Milk	306	0.01	0.002	LC-MS/MS	P
Dicofol	Milk	306	0.01	0.002	GC-MS/MS	P
Dicrotophos	Milk	306	0.01	0.002	GC-MS/MS	P
Dicyandiamide (DCD)	Milk	60	0.1	0.05	LC-MS/MS	C
Dicyclanil	Milk	306	0.01	0.005	LC-MS/MS	P
Dicyclohexyl phthalate (DCHP)	Milk	60	1	0.01	GC-MS/MS	Pht
Didecyl phthalate (DDP)	Milk	60	1	0.01	GC-MS/MS	Pht
Didecyldimethylammonium chloride (DM-DC10)	Milk	60	0.1	0.01	LC-MS/MS	QAC
Didodecyldimethylammoniu m chloride (DM-DC12)	Milk	60	0.1	0.01	LC-MS/MS	QAC
Dieldrin	Milk	306	0.006	0.002	GC-MS/MS	P
Diethofencarb	Milk	306	0.01	0.002	GC-MS/MS	P
Diethyl phthalate (DEP)	Milk	60	1	0.2	GC-MS/MS	Pht
Difenoconazole	Milk	306	0.005	0.002	GC-MS/MS	P
Diflubenzuron	Milk	306	0.01	0.002	LC-MS/MS	P
Diflufenican	Milk	306	0.01	0.002	GC-MS/MS	P
Diheptyl phthalate (DHP)	Milk	60	1	0.01	GC-MS/MS	Pht
Dihexyl phthalate (DHXP)	Milk	60	1	0.01	GC-MS/MS	Pht
Dihydrostreptomycin	Milk	306	0.02	0.02	MIT	IS
Diisobutyl phthalate (DIBP)	Milk	60	1	0.01	GC-MS/MS	Pht
Diisodecyl phthalate (DIDP)	Milk	60	1	0.1	GC-MS/MS	Pht
Diisononyl-phthalate (DINP)	Milk	60	1	0.1	GC-MS/MS	Pht
Diisooctyl phthalate (DIOP)	Milk	60	1	0.1	GC-MS/MS	Pht
Diisopropyl phthalate (DIP)	Milk	60	1	0.01	GC-MS/MS	Pht
Dimepiperate	Milk	306	0.01	0.002	GC-MS/MS	P
Dimethenamid	Milk	306	0.01	0.002	GC-MS/MS	P
Dimethoate	Milk	306	0.01	0.002	GC-MS/MS	P
Dimethomorph	Milk	306	0.01	0.002	LC-MS/MS	P
Dimethyl isophthalate (DMIP)	Milk	60	0.05	0.01	GC-MS/MS	Pht
Dimethyl phthalate (DMP)	Milk	60	1	0.02	GC-MS/MS	Pht
Dimethylditetradecylammon ium chloride (DM-DC14)	Milk	60	0.1	0.01	LC-MS/MS	QAC

Compound	Matrix	Samples to test	Action limit (mg/kg)	LoR (mg/kg)	Method	Code**
Dimethylvinphos	Milk	306	0.01	0.002	GC-MS/MS	P
Di-n-butyl phthalate (DBP)	Milk	60	0.3	0.1	GC-MS/MS	Pht
Di-n-nonyl phthalate (DNP)	Milk	60	1	0.01	GC-MS/MS	Pht
Di-n-octyl phthalate (DNOP)	Milk	60	1	0.01	GC-MS/MS	Pht
Di-n-pentyl phthalate (DNPP)	Milk	60	1	0.1	GC-MS/MS	Pht
Di-n-undecyl phthalate (DUP)	Milk	60	1	0.5	GC-MS/MS	Pht
Dioxabenzofos	Milk	306	0.01	0.002	GC-MS/MS	P
Dioxathion	Milk	306	0.01	0.005	LC-MS/MS	P
Diphenamid	Milk	306	0.01	0.002	GC-MS/MS	P
Diphenyl phthalate (DPP)	Milk	60	1	0.01	GC-MS/MS	Pht
Diphenylamine	Milk	306	0.01	0.002	GC-MS/MS	P
Disulfoton	Milk	306	0.01	0.002	GC-MS/MS	P
Dithiopyr	Milk	306	0.01	0.002	GC-MS/MS	P
Diuron	Milk	306	0.01	0.002	LC-MS/MS	P
Doramectin	Milk	155	0.003	0.003	LC-MS/MS	AN
Edifenphos	Milk	306	0.01	0.002	GC-MS/MS	P
Emamectin benzoate	Milk	306	0.002	0.002	LC-MS/MS	P
Endosulfan sulfate	Milk	306	0.01	0.002	GC-MS/MS	P
Endrin	Milk	306	0.002	0.002	GC-MS/MS	P
Endrin ketone	Milk	306	0.01	0.005	GC-MS/MS	P
EPN	Milk	306	0.01	0.002	GC-MS/MS	P
Epoxiconazole	Milk	306	0.002	0.002	GC-MS/MS	P
Eprinomectin	Milk	155	0.02	0.003	LC-MS/MS	AN
EPTC	Milk	306	0.01	0.002	GC-MS/MS	P
Erythromycin	Milk	306	0.01	0.01	MIT	IS
Esprocarb	Milk	306	0.01	0.002	GC-MS/MS	P
Ethalfluralin	Milk	306	0.01	0.002	GC-MS/MS	P
Ethametsulfuron-methyl	Milk	306	0.01	0.002	LC-MS/MS	P
Ethiofencarb	Milk	306	0.01	0.002	GC-MS/MS	P
Ethion	Milk	306	0.01	0.002	GC-MS/MS	P
Ethiprole	Milk	306	0.01	0.002	LC-MS/MS	P
Ethofumesate	Milk	306	0.01	0.002	GC-MS/MS	P
Ethoprophos	Milk	306	0.01	0.002	GC-MS/MS	P
Ethoxyquin	Milk	306	0.01	0.002	GC-MS/MS	P
Ethoxysulfuron	Milk	306	0.01	0.002	LC-MS/MS	P
Ethychlozate	Milk	306	0.01	0.002	LC-MS/MS	P
Etobenzanid	Milk	306	0.01	0.002	LC-MS/MS	P
Etoxazole	Milk	306	0.01	0.002	GC-MS/MS	P

Compound	Matrix	Samples to test	Action limit (mg/kg)	LoR (mg/kg)	Method	Code**
Etridiazole	Milk	306	0.01	0.002	GC-MS/MS	P
Etrimfos	Milk	306	0.01	0.002	GC-MS/MS	P
Famoxadone	Milk	306	0.03	0.01	LC-MS/MS	P
Famphur	Milk	306	0.01	0.002	GC-MS/MS	P
Fenamidone	Milk	306	0.01	0.002	LC-MS/MS	P
Fenamiphos	Milk	306	0.002	0.002	LC-MS/MS	P
Fenarimol	Milk	306	0.01	0.002	GC-MS/MS	P
Fenbendazole+	Milk	155	0.01	0.001	LC-MS/MS	AN
Fenbuconazole	Milk	306	0.01	0.002	LC-MS/MS	P
Fenchlorphos	Milk	306	0.01	0.002	GC-MS/MS	P
Fenhexamid	Milk	306	0.01	0.002	LC-MS/MS	P
Fenitrothion	Milk	306	0.01	0.002	GC-MS/MS	P
Fenobucarb	Milk	306	0.01	0.002	GC-MS/MS	P
Fenothiocarb	Milk	306	0.01	0.002	LC-MS/MS	P
Fenoxanil	Milk	306	0.01	0.002	GC-MS/MS	P
Fenoxaprop	Milk	306	0.01	0.005	LC-MS/MS	P
Fenoxaprop-ethyl	Milk	306	0.01	0.002	GC-MS/MS	P
Fenoxycarb	Milk	306	0.01	0.002	GC-MS/MS	P
Fenpiclonil	Milk	306	0.01	0.002	GC-MS/MS	P
Fenpropathrin	Milk	306	0.01	0.002	GC-MS/MS	P
Fenpropidin	Milk	306	0.005	0.002	LC-MS/MS	P
Fenpropimorph	Milk	306	0.01	0.002	GC-MS/MS	P
Fenpyroximate	Milk	306	0.01	0.002	LC-MS/MS	P
Fensulfothion	Milk	306	0.01	0.002	GC-MS/MS	P
Fenthion	Milk	306	0.01	0.002	GC-MS/MS	P
Fenthion oxon	Milk	306	0.01	0.002	LC-MS/MS	P
Fenthion oxon sulfone	Milk	306	0.01	0.005	LC-MS/MS	P
Fenthion oxon sulfoxide	Milk	306	0.01	0.002	LC-MS/MS	P
Fenthion sulfone	Milk	306	0.01	0.002	GC-MS/MS	P
Fenthion-ethyl	Milk	306	0.01	0.002	GC-MS/MS	P
Fentrazamide	Milk	306	0.01	0.01	LC-MS/MS	P
Fenvalerate	Milk	306	0.01	0.002	GC-MS/MS	P
Ferimzone	Milk	306	0.01	0.002	LC-MS/MS	P
Fipronil	Milk	306	0.01	0.002	GC-MS/MS	P
Fipronil sulfide	Milk	306	0.01	0.002	LC-MS/MS	P
Fipronil sulfone	Milk	306	0.01	0.002	LC-MS/MS	P
Flamprop	Milk	306	0.01	0.002	LC-MS/MS	P
Flamprop-methyl	Milk	306	0.01	0.002	GC-MS/MS	P

Compound	Matrix	Samples to test	Action limit (mg/kg)	LoR (mg/kg)	Method	Code**
Flazasulfuron	Milk	306	0.01	0.002	LC-MS/MS	P
Florfenicol	Milk	306	0.0007	0.0007	LC-MS/MS	O
Fluacrypyrim	Milk	306	0.01	0.002	GC-MS/MS	P
Fluazifop-P-butyl	Milk	306	0.01	0.002	GC-MS/MS	P
Flubendazole	Milk	306	0.01	0.002	LC-MS/MS	P
Flubendazole+	Milk	155	0.1	0.001	LC-MS/MS	AN
Flubendiamide	Milk	306	0.1	0.02	LC-MS/MS	P
Flucythrinate	Milk	306	0.01	0.002	GC-MS/MS	P
Fludioxonil	Milk	306	0.01	0.005	LC-MS/MS	P
Flufenacet	Milk	306	0.01	0.002	LC-MS/MS	P
Flumethrin	Milk	306	0.03	0.005	GC-ECD	P
Flumiclorac-pentyl	Milk	306	0.01	0.002	GC-MS/MS	P
Flumioxazin	Milk	306	0.01	0.005	GC-MS/MS	P
Flunixin	Milk	155	0.04	0.002	LC-MS/MS	NS
Fluometuron	Milk	306	0.01	0.002	LC-MS/MS	P
Fluopicolide	Milk	306	0.02	0.002	GC-MS/MS	P
Fluopyram	Milk	306	0.3	0.002	LC-MS/MS	P
Fluquinconazole	Milk	306	0.01	0.002	GC-MS/MS	P
Fluridone	Milk	306	0.01	0.002	LC-MS/MS	P
Flusilazole	Milk	306	0.01	0.002	GC-MS/MS	P
Fluthiacet-methyl	Milk	306	0.01	0.002	LC-MS/MS	P
Flutolanil	Milk	306	0.01	0.002	GC-MS/MS	P
Flutriafol	Milk	306	0.01	0.002	GC-MS/MS	P
Fluvalinate	Milk	306	0.01	0.002	GC-MS/MS	P
Fonofos	Milk	306	0.01	0.002	GC-MS/MS	P
Forchlorfenuron	Milk	306	0.01	0.005	LC-MS/MS	P
Fosthiazate	Milk	306	0.01	0.002	GC-MS/MS	P
Fuberidazole	Milk	306	0.01	0.002	LC-MS/MS	P
Furalaxyl	Milk	306	0.01	0.002	GC-MS/MS	P
Furametpyr	Milk	306	0.01	0.002	LC-MS/MS	P
Furathiocarb	Milk	306	0.01	0.002	LC-MS/MS	P
Gentamicin*	Milk	306	0.1	0.3	Delvotest T*	IS
Glyphosate	Milk	60	0.05	0.01	LC-MS/MS	O
Halosulfuron-methyl	Milk	306	0.01	0.002	LC-MS/MS	P
Haloxyfop-etotyl	Milk	306	0.01	0.002	GC-MS/MS	P
Haloxyfop-methyl	Milk	306	0.01	0.002	GC-MS/MS	P
Heptachlor	Milk	306	0.004	0.002	GC-MS/MS	P
Heptachlor-endo-epoxide	Milk	306	0.01	0.005	GC-MS/MS	P

Compound	Matrix	Samples to test	Action limit (mg/kg)	LoR (mg/kg)	Method	Code**
Heptachlor-exo-epoxide	Milk	306	0.01	0.002	GC-MS/MS	P
Heptenophos	Milk	306	0.01	0.002	GC-MS/MS	P
Hexachlorobenzene (HCB)	Milk	306	0.01	0.002	GC-MS/MS	P
Hexaconazole	Milk	306	0.01	0.002	GC-MS/MS	P
Hexadecylpyridiniumammonium chloride (C16-PY)	Milk	60	0.1	0.01	LC-MS/MS	QAC
Hexadecyltrimethylammonium chloride (TM-C16)	Milk	60	0.1	0.01	LC-MS/MS	QAC
Hexaflumuron	Milk	306	0.01	0.01	LC-MS/MS	P
Hexazinone	Milk	306	0.01	0.002	GC-MS/MS	P
Hexyl 2-ethylhexyl phthalate (HEHP)	Milk	60	1	0.01	GC-MS/MS	Pht
Hexythiazox	Milk	306	0.05	0.002	LC-MS/MS	P
Imazalil	Milk	306	0.01	0.002	LC-MS/MS	P
Imazamethabenz-methyl	Milk	306	0.01	0.002	LC-MS/MS	P
Imazosulfuron	Milk	306	0.01	0.002	LC-MS/MS	P
Imidacloprid	Milk	306	0.1	0.005	LC-MS/MS	P
Imidacloprid-olefin	Milk	306	0.01	0.01	LC-MS/MS	P
Inabenfide	Milk	306	0.01	0.002	LC-MS/MS	P
Indanofan	Milk	306	0.01	0.005	LC-MS/MS	P
Indoxacarb	Milk	306	0.1	0.002	GC-MS/MS	P
Iodine	Milk	306	1.5	0.001	TMAH Digestion/ICP-MS	EL
Iodosulfuron-methyl	Milk	306	0.01	0.002	LC-MS/MS	P
Iprobenfos	Milk	306	0.01	0.002	GC-MS/MS	P
Iprodione	Milk	306	0.01	0.002	GC-MS/MS	P
Iprovalicarb	Milk	306	0.01	0.005	GC-MS/MS	P
Iron	Milk	306	5	0.5	Acid digest/ICP-MS	EL
Isazofos	Milk	306	0.01	0.002	GC-MS/MS	P
Isofenphos	Milk	306	0.01	0.005	GC-MS/MS	P
Isofenphos-methyl	Milk	306	0.01	0.005	LC-MS/MS	P
Isoprocarb	Milk	306	0.01	0.002	GC-MS/MS	P
Isoprothiolane	Milk	306	0.01	0.002	GC-MS/MS	P
Isoproturon	Milk	306	0.01	0.002	LC-MS/MS	P
Isopyrazam	Milk	306	0.01	0.002	LC-MS/MS	P
Isoxathion	Milk	306	0.01	0.002	LC-MS/MS	P
Ivermectin	Milk	155	0.01	0.003	LC-MS/MS	AN
Jodfenphos	Milk	306	0.01	0.002	GC-MS/MS	P
Kanamycin	Milk	306	0.1	0.1	MIT	IS
Karbutilate	Milk	306	0.01	0.002	LC-MS/MS	P

Compound	Matrix	Samples to test	Action limit (mg/kg)	LoR (mg/kg)	Method	Code**
Ketoprofen	Milk	155	0.1	0.005	LC-MS/MS	NS
Kresoxim-methyl	Milk	306	0.01	0.002	GC-MS/MS	P
Lactofen	Milk	306	0.01	0.002	GC-MS/MS	P
Lasalocid	Milk	60	0.015	0.015	LC-MS/MS	PC
Lead	Milk	306	0.02	0.001	Wet oxidation/ICP-MS	EL
Lenacil	Milk	306	0.01	0.002	LC-MS/MS	P
Leptophos	Milk	306	0.01	0.002	GC-MS/MS	P
Levamisole	Milk	155	0.001	0.001	LC-MS/MS	AN
Lindane (γ-HCH)	Milk	306	0.002	0.002	GC-MS/MS	P
Linuron	Milk	306	0.01	0.005	LC-MS/MS	P
Maduramicin	Milk	60	0.1	0.067	LC-MS/MS	PC
Malathion	Milk	306	0.01	0.005	GC-MS/MS	P
Mandipropamid	Milk	306	0.01	0.002	LC-MS/MS	P
Mebendazole	Milk	155	0.002	0.002	LC-MS/MS	AN
Mebendazole-amine	Milk	155	0.002	0.002	LC-MS/MS	AN
Mefenacet	Milk	306	0.01	0.002	LC-MS/MS	P
Mefenpyr-diethyl	Milk	306	0.01	0.002	LC-MS/MS	P
Melamine	Milk	60	0.1	0.1	LC-MS/MS	O
Meloxicam	Milk	155	0.015	0.002	LC-MS/MS	NS
Mepanipyrim	Milk	306	0.01	0.002	LC-MS/MS	P
Mepronil	Milk	306	0.01	0.002	GC-MS/MS	P
Mercury	Milk	306	0.001	0.001	Acid digest/ICP-MS	EL
Mesotrione	Milk	306	0.01	0.005	LC-MS/MS	P
Mesulfenfos	Milk	306	0.01	0.002	GC-MS/MS	P
Metalaxyl	Milk	306	0.01	0.002	GC-MS/MS	P
Metamitron	Milk	306	0.01	0.002	LC-MS/MS	P
Metconazole	Milk	306	0.01	0.002	LC-MS/MS	P
Methabenzthiazuron	Milk	306	0.01	0.002	LC-MS/MS	P
Methacrifos	Milk	306	0.01	0.002	GC-MS/MS	P
Methamidophos	Milk	306	0.01	0.002	LC-MS/MS	P
Methidathion*	Milk	306	0.002	0.002	GC-MS/MS	P
Methiocarb	Milk	306	0.01	0.002	GC-MS/MS	P
Methiocarb sulfone	Milk	306	0.01	0.002	LC-MS/MS	P
Methiocarb sulfoxide	Milk	306	0.01	0.002	LC-MS/MS	P
Methomyl	Milk	306	0.01	0.002	LC-MS/MS	P
Methoxychlor	Milk	306	0.01	0.002	GC-MS/MS	P
Methoxyfenozide	Milk	306	0.05	0.002	LC-MS/MS	P

Compound	Matrix	Samples to test	Action limit (mg/kg)	LoR (mg/kg)	Method	Code**
Metobromuron	Milk	306	0.01	0.005	LC-MS/MS	P
Metolachlor	Milk	306	0.01	0.002	GC-MS/MS	P
Metosulam	Milk	306	0.01	0.002	LC-MS/MS	P
Metrafenone	Milk	306	0.01	0.002	LC-MS/MS	P
Metribuzin	Milk	306	0.01	0.002	GC-MS/MS	P
Metsulfuron-methyl	Milk	306	0.01	0.005	LC-MS/MS	P
Mevinphos	Milk	306	0.01	0.002	GC-MS/MS	P
Mirex	Milk	306	0.01	0.002	GC-MS/MS	P
Molinate	Milk	306	0.01	0.002	GC-MS/MS	P
Monensin*	Milk	60	0.009	0.009	LC-MS/MS	PC
Monocrotophos	Milk	306	0.01	0.005	LC-MS/MS	P
Monolinuron	Milk	306	0.01	0.002	LC-MS/MS	P
Moxidectin	Milk	155	0.04	0.003	LC-MS/MS	AN
Myclobutanil	Milk	306	0.01	0.002	GC-MS/MS	P
Napropamide	Milk	306	0.01	0.002	GC-MS/MS	P
Narasin	Milk	60	0.1	0.017	LC-MS/MS	PC
Nitrofen	Milk	306	0.01	0.002	GC-MS/MS	P
Nitrothal-isopropyl	Milk	306	0.01	0.002	GC-MS/MS	P
Norflurazon	Milk	306	0.01	0.002	GC-MS/MS	P
Novaluron	Milk	306	0.1	0.005	LC-MS/MS	P
o,p'-DDE ***	Milk	306	0.02	0.002	GC-MS/MS	P
o,p'-DDT ***	Milk	306	0.02	0.002	GC-MS/MS	P
o,p'-TDE ***	Milk	306	0.02	0.002	GC-MS/MS	P
Octhilinone	Milk	306	0.01	0.002	LC-MS/MS	P
Oleandomycin	Milk	306	0.05	0.05	MIT	IS
Omethoate	Milk	306	0.01	0.002	LC-MS/MS	P
Oryzalin	Milk	306	0.01	0.01	LC-MS/MS	P
Oxabetrinil	Milk	306	0.01	0.01	LC-MS/MS	P
Oxadiazon	Milk	306	0.01	0.002	GC-MS/MS	P
Oxadixyl	Milk	306	0.01	0.002	GC-MS/MS	P
Oxamyl	Milk	306	0.01	0.002	LC-MS/MS	P
Oxfendazole sulfone+	Milk	155	0.01	0.001	LC-MS/MS	AN
Oxfendazole+	Milk	155	0.01	0.001	LC-MS/MS	AN
Oxycarboxin	Milk	306	0.01	0.002	LC-MS/MS	P
Oxychlordane	Milk	306	0.01	0.005	GC-MS/MS	P
Oxyfluorfen	Milk	306	0.01	0.005	GC-MS/MS	P
Oxyphenbutazone	Milk	155	0.005	0.005	LC-MS/MS	NS
Oxytetracycline*	Milk	306	0.01	0.085	Delvotest T*	IS

Compound	Matrix	Samples to test	Action limit (mg/kg)	LoR (mg/kg)	Method	Code**
Oxytetracycline*	Milk	306	0.01	0.015	MIT	IS
p,p'-DDE ***	Milk	306	0.02	0.002	GC-MS/MS	P
p,p'-DDT ***	Milk	306	0.02	0.002	GC-MS/MS	P
p,p'-TDE ***	Milk	306	0.02	0.002	GC-MS/MS	P
Paclobutrazol	Milk	306	0.01	0.002	GC-MS/MS	P
Parathion	Milk	306	0.01	0.002	GC-MS/MS	P
Parathion-methyl	Milk	306	0.01	0.002	GC-MS/MS	P
Penconazole	Milk	306	0.01	0.002	GC-MS/MS	P
Pencycuron	Milk	306	0.01	0.002	LC-MS/MS	P
Pendimethalin	Milk	306	0.01	0.005	GC-MS/MS	P
Pentachlorobenzene	Milk	306	0.01	0.002	GC-MS/MS	P
Penthiopyrad	Milk	306	0.01	0.002	LC-MS/MS	P
Permethrin	Milk	306	0.01	0.002	GC-MS/MS	P
Perthane	Milk	306	0.01	0.002	GC-MS/MS	P
Phenmedipham	Milk	306	0.01	0.002	LC-MS/MS	P
Phenthoate	Milk	306	0.01	0.002	GC-MS/MS	P
Phenylbutazone	Milk	155	0.007	0.002	LC-MS/MS	NS
Phorate	Milk	306	0.01	0.002	GC-MS/MS	P
Phorate sulfone	Milk	306	0.01	0.002	GC-MS/MS	P
Phorate sulfoxide	Milk	306	0.01	0.002	GC-MS/MS	P
Phosalone	Milk	306	0.01	0.002	GC-MS/MS	P
Phosmet	Milk	306	0.01	0.002	GC-MS/MS	P
Phosphamidon	Milk	306	0.01	0.002	LC-MS/MS	P
Phoxim	Milk	306	0.01	0.005	LC-MS/MS	P
Picolinafen	Milk	306	0.01	0.002	GC-MS/MS	P
Piperonyl butoxide	Milk	306	0.01	0.002	GC-MS/MS	P
Piperophos	Milk	306	0.01	0.002	GC-MS/MS	P
Pirimicarb	Milk	306	0.01	0.002	GC-MS/MS	P
Pirimiphos-methyl	Milk	306	0.01	0.002	GC-MS/MS	P
Pretilachlor	Milk	306	0.01	0.002	GC-MS/MS	P
Prochloraz	Milk	306	0.01	0.002	GC-MS/MS	P
Procymidone	Milk	306	0.01	0.002	GC-MS/MS	P
Profenofos	Milk	306	0.01	0.002	LC-MS/MS	P
Promecarb	Milk	306	0.01	0.002	GC-MS/MS	P
Prometryn	Milk	306	0.01	0.002	GC-MS/MS	P
Propachlor	Milk	306	0.01	0.002	GC-MS/MS	P
Propamocarb	Milk	306	0.01	0.01	LC-MS/MS	P
Propanil	Milk	306	0.01	0.01	LC-MS/MS	P

Compound	Matrix	Samples to test	Action limit (mg/kg)	LoR (mg/kg)	Method	Code**
Propaphos	Milk	306	0.01	0.002	LC-MS/MS	P
Propaquizafop	Milk	306	0.01	0.002	LC-MS/MS	P
Propargite	Milk	306	0.01	0.002	GC-MS/MS	P
Propazine	Milk	306	0.01	0.002	GC-MS/MS	P
Propetamphos	Milk	306	0.01	0.002	GC-MS/MS	P
Propham	Milk	306	0.01	0.002	GC-MS/MS	P
Propiconazole	Milk	306	0.01	0.002	GC-MS/MS	P
Propoxur	Milk	306	0.01	0.002	GC-MS/MS	P
Propyzamide	Milk	306	0.01	0.002	GC-MS/MS	P
Proquinazid	Milk	306	0.01	0.002	LC-MS/MS	P
Prosulfocarb	Milk	306	0.01	0.002	LC-MS/MS	P
Prothiofos	Milk	306	0.01	0.002	GC-MS/MS	P
Pymetrozine	Milk	306	0.01	0.002	LC-MS/MS	P
Pyraclofos	Milk	306	0.01	0.002	GC-MS/MS	P
Pyraclostrobin	Milk	306	0.01	0.002	GC-MS/MS	P
Pyraflufen-ethyl	Milk	306	0.01	0.002	GC-MS/MS	P
Pyrasulfotole	Milk	306	0.01	0.005	LC-MS/MS	P
Pyrazophos	Milk	306	0.01	0.002	GC-MS/MS	P
Pyrethrins	Milk	306	0.01	0.005	LC-MS/MS	P
Pyributicarb	Milk	306	0.01	0.002	GC-MS/MS	P
Pyridaben	Milk	306	0.01	0.002	GC-MS/MS	P
Pyridaphenthion	Milk	306	0.01	0.002	GC-MS/MS	P
Pyrifenox	Milk	306	0.01	0.002	LC-MS/MS	P
Pyriftalid	Milk	306	0.01	0.002	LC-MS/MS	P
Pyrimethanil	Milk	306	0.01	0.002	GC-MS/MS	P
Pyrimidifen	Milk	306	0.01	0.002	GC-MS/MS	P
Pyriproxyfen	Milk	306	0.01	0.002	GC-MS/MS	P
Pyroquilon	Milk	306	0.01	0.002	LC-MS/MS	P
Pyroxsulam	Milk	306	0.01	0.002	LC-MS/MS	P
Quinalphos	Milk	306	0.01	0.002	GC-MS/MS	P
Quinoclamine	Milk	306	0.01	0.005	LC-MS/MS	P
Quinoxyfen	Milk	306	0.01	0.002	GC-MS/MS	P
Quintozene	Milk	306	0.01	0.002	GC-MS/MS	P
Quizalofop-ethyl	Milk	306	0.01	0.002	GC-MS/MS	P
Rimsulfuron	Milk	306	0.01	0.002	LC-MS/MS	P
Saflufenacil	Milk	306	0.01	0.002	LC-MS/MS	P
Salinomycin	Milk	60	0.1	0.009	LC-MS/MS	PC
Sebuthylazine	Milk	306	0.01	0.002	GC-MS/MS	P

Compound	Matrix	Samples to test	Action limit (mg/kg)	LoR (mg/kg)	Method	Code**
Selenium	Milk	306	2	0.002	Acid digest/ICP-MS	EL
SEM (semicarbazide)	Milk	306	0.0005	0.0005	LC-MS/MS	N
Semduramicin	Milk	60	0.1	0.06	LC-MS/MS	PC
Sethoxydim	Milk	306	0.01	0.002	LC-MS/MS	P
Simazine	Milk	306	0.01	0.002	GC-MS/MS	P
Simeconazole	Milk	306	0.01	0.002	GC-MS/MS	P
Simetryn	Milk	306	0.01	0.002	GC-MS/MS	P
Sodium monofluoroacetate (1080)	Milk	60	0.001	0.001	LC-MS/MS	O
Sodium Thiocyanate	Milk	60	20	0.5	HPLC-UV	O
Spinetoram	Milk	306	0.01	0.002	LC-MS/MS	P
Spinosad	Milk	306	0.01	0.002	LC-MS/MS	P
Spiramycin	Milk	306	0.04	0.04	MIT	IS
Spiromesifen	Milk	306	0.01	0.005	LC-MS/MS	P
Spiromesifen-enol	Milk	306	0.01	0.002	LC-MS/MS	P
Spirotetramat	Milk	306	0.002	0.002	LC-MS/MS	P
Spirotetramat-enol	Milk	306	0.005	0.005	LC-MS/MS	P
Spirotetramat-enol-glucoside	Milk	306	0.005	0.005	LC-MS/MS	P
Spirotetramat-keto-hydroxy	Milk	306	0.002	0.002	LC-MS/MS	P
Spirotetramat-mono-hydroxy	Milk	306	0.002	0.002	LC-MS/MS	P
Spiroxamine	Milk	306	0.01	0.002	LC-MS/MS	P
Streptomycin	Milk	306	0.02	0.02	MIT	IS
Sulfadiazine	Milk	306	0.1	0.1	Delvotest T*	IS
Sulfentrazone	Milk	306	0.01	0.005	LC-MS/MS	P
Sulprofos	Milk	306	0.01	0.002	LC-MS/MS	P
Tebuconazole	Milk	306	0.01	0.002	GC-MS/MS	P
Tebufenozide	Milk	306	0.01	0.01	LC-MS/MS	P
Tebufenpyrad	Milk	306	0.01	0.002	GC-MS/MS	P
Tebuthiuron	Milk	306	0.01	0.002	LC-MS/MS	P
Tecnazene	Milk	306	0.01	0.002	GC-MS/MS	P
Tefluthrin	Milk	306	0.01	0.002	GC-MS/MS	P
Temephos	Milk	306	0.01	0.005	LC-MS/MS	P
Tepraloxydim	Milk	306	0.01	0.002	LC-MS/MS	P
Terbacil	Milk	306	0.01	0.002	GC-MS/MS	P
Terbufos	Milk	306	0.01	0.002	GC-MS/MS	P
Terbumeton	Milk	306	0.01	0.002	LC-MS/MS	P
Terbuthylazine	Milk	306	0.01	0.002	GC-MS/MS	P
Terbutryn	Milk	306	0.01	0.002	GC-MS/MS	P

Compound	Matrix	Samples to test	Action limit (mg/kg)	LoR (mg/kg)	Method	Code**
Tetrachlorvinphos	Milk	306	0.01	0.002	GC-MS/MS	P
Tetraconazole	Milk	306	0.01	0.002	GC-MS/MS	P
Tetracycline	Milk	306	0.05	0.05	SNAP (tetracycline)	IS
Tetracycline*	Milk	306	0.015	0.015	MIT	IS
Tetradifon	Milk	306	0.01	0.002	GC-MS/MS	P
Thenylchlor	Milk	306	0.01	0.002	GC-MS/MS	P
Thiabendazole	Milk	306	0.01	0.002	LC-MS/MS	P
Thiacloprid	Milk	306	0.05	0.002	LC-MS/MS	P
Thiamethoxam	Milk	306	0.05	0.005	LC-MS/MS	P
Thiazopyr	Milk	306	0.01	0.002	LC-MS/MS	P
Thidiazuron	Milk	306	0.01	0.002	LC-MS/MS	P
Thiobencarb	Milk	306	0.01	0.002	GC-MS/MS	P
Thiometon	Milk	306	0.01	0.002	GC-MS/MS	P
Tiadinil	Milk	306	0.01	0.002	LC-MS/MS	P
Tin	Milk	306	0.1	0.005	Acid digest/ICP-MS	EL
Tolclofos-methyl	Milk	306	0.01	0.002	GC-MS/MS	P
Tolfenamic acid	Milk	155	0.05	0.002	LC-MS/MS	NS
Tolylfluanid	Milk	306	0.01	0.01	LC-MS/MS	P
Tralkoxydim	Milk	306	0.01	0.002	LC-MS/MS	P
trans-Chlordane	Milk	306	0.002	0.002	GC-MS/MS	P
Transfluthrin	Milk	306	0.01	0.005	GC-MS/MS	P
Triadimefon	Milk	306	0.01	0.005	GC-MS/MS	P
Triadimenol	Milk	306	0.01	0.005	GC-MS/MS	P
Tri-allate	Milk	306	0.01	0.002	GC-MS/MS	P
Triasulfuron	Milk	306	0.01	0.002	LC-MS/MS	P
Triazophos	Milk	306	0.01	0.002	GC-MS/MS	P
Tribenuron-methyl	Milk	306	0.01	0.005	LC-MS/MS	P
Tribufos	Milk	306	0.01	0.002	GC-MS/MS	P
Trichlorfon	Milk	306	0.01	0.005	LC-MS/MS	P
Triclabendazole sulfone+	Milk	155	0.01	0.005	LC-MS/MS	AN
Triclabendazole sulfoxide+	Milk	155	0.01	0.01	LC-MS/MS	AN
Triclabendazole+	Milk	155	0.01	0.005	LC-MS/MS	AN
Tricyclazole	Milk	306	0.01	0.002	LC-MS/MS	P
Trifloxystrobin	Milk	306	0.01	0.002	GC-MS/MS	P
Trifloxysulfuron-sodium	Milk	306	0.01	0.002	LC-MS/MS	P
Triflumizole	Milk	306	0.01	0.002	LC-MS/MS	P
Triflumuron	Milk	306	0.01	0.002	LC-MS/MS	P
Trifluralin	Milk	306	0.01	0.002	GC-MS/MS	P

Compound	Matrix	Samples to test	Action limit (mg/kg)	LoR (mg/kg)	Method	Code**
Triflusulfuron-methyl	Milk	306	0.01	0.002	LC-MS/MS	P
Triforine	Milk	306	0.01	0.005	LC-MS/MS	P
Triticonazole	Milk	306	0.01	0.002	GC-MS/MS	P
Tylosin	Milk	306	0.05	0.05	Delvotest T*	IS
Tylosin	Milk	306	0.05	0.033	MIT	IS
Uniconazole-P	Milk	306	0.01	0.002	GC-MS/MS	P
Vamidothion	Milk	306	0.01	0.002	LC-MS/MS	P
Vinclozolin	Milk	306	0.01	0.002	GC-MS/MS	P
XMC	Milk	306	0.01	0.002	GC-MS/MS	P
Zinc	Milk	306	10	0.1	Acid digest/ICP-MS	EL
Zoxamide	Milk	306	0.01	0.002	LC-MS/MS	P

Notes

** Refer to Appendix 1 for code

*** Action limit applies corrected to milk with 4% milkfat

Delvotest T* Verified in milk by the testing laboratory

[compound]* Compounds are included even though the method may not detect down to action limits as it will still enable the conformance of milk at delivery to the processing premises to be assessed

+ Final result takes into account the residue definition

4 Appendix 1: Code and method information

Table 3: Test method descriptions

Method	Description
Delvotest T	Bacterial inhibition assay
GC-ECD	Gas chromatography – electron capture detection
GC-MS/MS	Gas chromatography tandem mass spectrometry
HPLC	High-performance liquid chromatography
HPLC-UV	High-performance liquid chromatography with ultraviolet detection
ICP-MS	Inductively coupled plasma mass spectrometry
LC-MS/MS	Liquid chromatography tandem mass spectrometry
MIT	Screen test using 4-plate microbial inhibition test (plate bioassay)
NIA	Calibrated nephelometric immune assay
SNAP (tetracycline)	Enzyme-linked receptor-binding assay which binds tetracycline
UHPLC	Ultra-high-performance liquid chromatography

Table 4: Compound and compound group codes

Code	Compound or compound group
A6	An 'unauthorised substance' as listed in Annex 1, Group A (6) of Directive 96/23/EC
AF	Aflatoxins
AN	Anthelmintics
C	Dicyandiamide (DCD)

Code	Compound or compound group
D	Dexamethasone
EL	Chemical element
IS	Inhibitory substance
MC	Milk component
N	Nitrofurans
NS	Nonsteroidal anti-inflammatory drug (NSAIDs)
O	Other - cyanuric acid, melamine, glyphosate, 1080, sodium thiocyanate
P	Pesticides
PC	Polyether coccidiostats
Pht	Phthalates
QAC	Quaternary ammonium compounds