

# Dairy National Chemical Contaminants Programme

## 2005/06

- provides an assurance that not less than 99% of raw milk conforms to New Zealand and international requirements at the farm gate.
- **We looked for:**
  - 244 compounds or elements including:
    - Antibiotics and other veterinary medicines
    - Pesticides
    - Herbicides
    - Fungicides
    - Compounds withdrawn or not permitted for food producing animals
    - Aflatoxins
    - Chemical elements
  - All sampling was on the basis of the milk or colostrum at the farm gate prior to any dilution, with the exception of 49 colostrum samples taken from the tanker at delivery to the factory.
- **We tested:**
  - 6 random raw milk rounds (310 samples) and 2 targeted colostrum rounds (99 samples).
  - almost 95,000 individual results.

- **What we found:**

For 2005/06 one raw milk sample contained penicillin at a level above the MRL, caused by an animal being treated with the antibiotic but the milk had not been withheld correctly. The product manufactured was shown to be well under the MRL. No colostrum samples exceeded a New Zealand MRL.

Because the sampling occurs at the farm prior to consolidation these results give a very high level of confidence that dairy products meet the required limits for chemical residues and contaminants.

Where a test result indicated a result above that allowed by any overseas market investigations were undertaken. On each occasion, investigations initiated from NZFSA residue monitoring confirmed that all dairy products met the MRL of the intended markets.

**Table 1: Summary of NCCP results for the period 1 July 2005 to 30 June 2006**

Group of Substances	Compounds	Raw Milk 2005/2006			Raw Colostrum 2005/2006				
		Samples <sup>1</sup>	Not Detected	Detected <sup>2</sup> below MRL	Non-conforming <sup>3</sup>	Samples <sup>1</sup>	Not Detected	Detected <sup>2</sup> below MRL	Non-conforming <sup>3</sup>
Group A(6)									
	Chloramphenicol	310	310	0	0	50	50	0	0
	Dapsone	310	310	0	0	99	99	0	0
	SEM (Nitrofurazone derivative)	310	310	0	0	50	50	0	0
	AOZ (Furazolidone derivative)	310	310	0	0	50	50	0	0
	AMAZ (Furaltadone derivative)	310	310	0	0	50	50	0	0
	ADH (nitrofurantoin derivative)	310	310	0	0	50	50	0	0
Group B(1)									
Penicillins	Benzyl penicillin	310	309	0	1	99	95	4	0
	Ampicillin	310	310	0	0	99	98	1	0
	Amoxicillin	310	310	0	0	99	99	0	0
	Cloxacillin	310	310	0	0	99	99	0	0
	Dicloxacillin	310	310	0	0	99	99	0	0
	Nafcillin	310	310	0	0	99	99	0	0
	Oxacillin	310	310	0	0	99	99	0	0
Cephalosporins	Cefuroxime	310	310	0	0	99	99	0	0
	Cefacetile	310	310	0	0	99	99	0	0
	Ceftiofur	310	310	0	0	99	99	0	0
	Cephalexin	310	310	0	0	99	99	0	0
	Cephalonium	310	310	0	0	99	80	19*	0

Group of Substances	Compounds	Raw Milk 2005/2006				Raw Colostrum 2005/2006			
		Samples <sup>1</sup>	Not Detected	Detected <sup>2</sup> below MRL	Non-conforming <sup>3</sup>	Samples <sup>1</sup>	Not Detected	Detected <sup>2</sup> below MRL	Non-conforming <sup>3</sup>
	Cephaperazone	310	310	0	0	99	99	0	0
	Cephapirin	310	309	1	0	99	99	0	0
	Cephazolin	310	310	0	0	99	99	0	0
Aminoglycosides	Streptomycin	310	310	0	0	99	99	0	0
	Dihydro-streptomycin	310	310	0	0	99	99	0	0
	Gentamycin	310	310	0	0	99	99	0	0
	Neomycin	310	310	0	0	99	99	0	0
	Framycetin	310	310	0	0	99	99	0	0
Macrolides	Tylosin	310	310	0	0	99	99	0	0
	Erythromycin	310	310	0	0	99	99	0	0
	Oleandomycin	310	310	0	0	99	99	0	0
	Lincomycin	310	310	0	0	99	99	0	0
	Pirlimycin	310	310	0	0	99	99	0	0
	Spiramycin	310	310	0	0	99	99	0	0
	Tilmicosin	310	310	0	0	99	99	0	0
Sulphonamides	Sulfadiazine	310	310	0	0	99	99	0	0
	Sulfacetamide	310	310	0	0	99	99	0	0
	Sulfadimethoxine	310	310	0	0	99	99	0	0
	Sulfamerazine	310	310	0	0	99	99	0	0
	Sulfamethazine (Sulpfadimadine)	310	310	0	0	99	99	0	0
	Sulfamethoxazole	310	310	0	0	99	99	0	0
	Sulfathiazol	310	310	0	0	99	99	0	0
	Sulfonamide group	310	310	0	0	99	99	0	0
Tetracyclines	Tetracycline	310	310	0	0	99	98	1	0

Group of Substances	Compounds	Raw Milk 2005/2006				Raw Colostrum 2005/2006			
		Samples <sup>1</sup>	Not Detected	Detected <sup>2</sup> below MRL	Non-conforming <sup>3</sup>	Samples <sup>1</sup>	Not Detected	Detected <sup>2</sup> below MRL	Non-conforming <sup>3</sup>
	Oxytetracycline	310	310	0	0	99	99	0	0
	Chlortetracycline	310	310	0	0	99	99	0	0
	Doxycycline	310	310	0	0	99	99	0	0
	Sum of Tetracyclines	310	310	0	0	99	98	1	0
Diamino pyrimidine derivatives	Trimethoprim	310	310	0	0	50	50	0	0
	Baquiloprim	310	310	0	0	99	99	0	0
Group B(2)(a)									
Benzimidazoles	Fenbendazole	310	310	0	0	50	50	0	0
	Oxfendazole	310	310	0	0	50	50	0	0
	Albendazole	310	310	0	0	50	50	0	0
	Ricobendazole	310	310	0	0	50	50	0	0
Tetra-hydro-imidazoles	Levamisole	310	310	0	0	50	49	1*	0
Milbemycins	Moxidectin	50	49	1	0	50	50	0	0
	Eprinomectin	50	50	0	0	50	50	0	0
	Ivermectin	50	50	0	0	50	49	1*	0
	Doramectin	50	50	0	0	50	50	0	0
	Emamectin	50	50	0	0	50	50	0	0
	Abamectin	50	50	0	0	50	49	1*	0
Group B(2)(c)									
Synthetic	Permethrin	310	310	0	0	99	99	0	0

Group of Substances	Compounds	Raw Milk 2005/2006				Raw Colostrum 2005/2006			
		Samples <sup>1</sup>	Not Detected	Detected <sup>2</sup> below MRL	Non-conforming <sup>3</sup>	Samples <sup>1</sup>	Not Detected	Detected <sup>2</sup> below MRL	Non-conforming <sup>3</sup>
pyrethroids	Bioresmethrin	310	310	0	0	99	99	0	0
	Cyhalothrin	310	310	0	0	99	99	0	0
	Cyfluthrin	310	310	0	0	99	99	0	0
	Cypermethrin	310	310	0	0	99	99	0	0
	Deltamethrin	310	310	0	0	99	99	0	0
	Flumethrin	310	310	0	0	99	99	0	0
	Fenvalerate	310	310	0	0	99	99	0	0
	Bifenthrin	310	310	0	0	99	99	0	0
	Dichlofenthion	310	310	0	0	99	99	0	0
	Fenpropathrin	310	310	0	0	99	99	0	0
	Piperonal butoxide	310	305	5	0	99	99	0	0
Carbamates	Bendiocarb	310	310	0	0	99	99	0	0
	Carbofuran	310	310	0	0	99	99	0	0
	Chlorpropham	310	310	0	0	99	99	0	0
	Fenoxycarb	310	310	0	0	99	99	0	0
	Furathiocarb	310	310	0	0	99	99	0	0
	Methiocarb	310	310	0	0	99	99	0	0
	Pirimicarb	310	310	0	0	99	99	0	0
	Propham	310	310	0	0	99	99	0	0
	Propoxur	310	310	0	0	99	99	0	0
Group B(2)(e)									
Non-steroidal anti-inflammatory drugs (NSAIDs)	Phenylbutazone	205	205	0	0	99	99	0	0
	Flunixin	205	205	0	0	99	99	0	0
	Ketoprofen	205	205	0	0	99	99	0	0

Group of Substances	Compounds	Raw Milk 2005/2006				Raw Colostrum 2005/2006			
		Samples <sup>1</sup>	Not Detected	Detected <sup>2</sup> below MRL	Non-conforming <sup>3</sup>	Samples <sup>1</sup>	Not Detected	Detected <sup>2</sup> below MRL	Non-conforming <sup>3</sup>
Group B(2)(f)									
Other	Dexamethasone	50	50	0	0	50	50	0	0
Group B(3)(a)									
Organochlorines	Aldrin	310	310	0	0	99	99	0	0
	Atrazine	310	310	0	0	99	99	0	0
	Dieldrin	310	310	0	0	99	99	0	0
	DDD (op + pp)	310	310	0	0	99	99	0	0
	DDE (op + pp)	310	267	43	0	99	65	34	0
	DDT (op + pp)	310	310	0	0	99	99	0	0
	DDD op	310	310	0	0	99	99	0	0
	DDD pp	310	310	0	0	99	99	0	0
	DDE op	310	310	0	0	99	99	0	0
	DDE pp	310	267	43	0	99	65	34	0
	DDT op	310	310	0	0	99	99	0	0
	DDT pp	310	310	0	0	99	99	0	0
	sum of DDT, DDD & DDE	310	267	43	0	99	65	34	0
	Hexachlorobenzene	310	310	0	0	99	98	1	0
	BHC, alpha isomer	310	310	0	0	99	99	0	0
	BHC, beta isomer	310	310	0	0	99	99	0	0
	BCH, gamma isomer (lindane)	310	310	0	0	99	99	0	0
	Chlordane cis	310	310	0	0	99	99	0	0
	Chlordane trans	310	310	0	0	99	99	0	0
	Dicofol	310	310	0	0	99	99	0	0

Group of Substances	Compounds	Raw Milk 2005/2006				Raw Colostrum 2005/2006			
		Samples <sup>1</sup>	Not Detected	Detected <sup>2</sup> below MRL	Non-conforming <sup>3</sup>	Samples <sup>1</sup>	Not Detected	Detected <sup>2</sup> below MRL	Non-conforming <sup>3</sup>
	Endosulfan sulphate	310	310	0	0	99	99	0	0
	Endosulphane I	310	310	0	0	99	99	0	0
	Endosulphane II	310	310	0	0	99	99	0	0
	Endrin	310	310	0	0	99	99	0	0
	Heptachlor	310	310	0	0	99	99	0	0
	Heptachlor epoxide	310	310	0	0	99	99	0	0
Group B(3)(b)									
Organophosphates	Chlorpyrifos (ethyl)	310	310	0	0	99	99	0	0
	Chlorpyrifos (methyl )	310	310	0	0	99	99	0	0
	Coumaphos	310	310	0	0	99	99	0	0
	Diazinon	310	310	0	0	99	99	0	0
	Famphur	310	310	0	0	99	99	0	0
	Fenthion	310	310	0	0	99	99	0	0
	Phorate	310	310	0	0	99	99	0	0
	Phosmet	310	310	0	0	99	99	0	0
	Pirimiphos-methyl	310	310	0	0	99	99	0	0
	Propetamphos	310	310	0	0	99	99	0	0
	Temephos	310	307	3	0	99	96	3	0
	Terbufos	310	310	0	0	99	99	0	0
	Dichlorvos	310	310	0	0	99	99	0	0
	Bromophos ethyl	310	310	0	0	99	99	0	0
	Bromophos methyl	310	310	0	0	99	99	0	0

Group of Substances	Compounds	Raw Milk 2005/2006				Raw Colostrum 2005/2006			
		number				number			
		Samples <sup>1</sup>	Not Detected	Detected <sup>2</sup> below MRL	Non-conforming <sup>3</sup>	Samples <sup>1</sup>	Not Detected	Detected <sup>2</sup> below MRL	Non-conforming <sup>3</sup>
	Chlorfenvinphos	310	310	0	0	99	99	0	0
	Dimethoate	310	310	0	0	99	99	0	0
	EPN	310	310	0	0	99	99	0	0
	Ethion	310	310	0	0	99	99	0	0
	Etrimfos	310	310	0	0	99	99	0	0
	Fenchlorophos	310	310	0	0	99	99	0	0
	Fenitrothion	310	310	0	0	99	99	0	0
	Fensulfothion	310	310	0	0	99	99	0	0
	Heptenophos	310	310	0	0	99	99	0	0
	Iodofenphos	310	310	0	0	99	99	0	0
	Isazophos	310	310	0	0	99	99	0	0
	Isofenphos	310	310	0	0	99	99	0	0
	Malathion	310	310	0	0	99	99	0	0
	Methacrifos	310	310	0	0	99	99	0	0
	Methidithion	310	310	0	0	99	99	0	0
	Mevinphos	310	310	0	0	99	99	0	0
	Parathion	310	310	0	0	99	99	0	0
	Parathion-methyl	310	310	0	0	99	99	0	0
	Phosalone	310	310	0	0	99	99	0	0
	Phosphamidon	310	310	0	0	99	99	0	0
	Pyrimiphos methyl	310	310	0	0	99	99	0	0
	Prothiophos	310	310	0	0	99	99	0	0
	Pyrazophos	310	310	0	0	99	99	0	0
	Tetrachlorvinphos	310	310	0	0	99	99	0	0
	Tolclofos-methyl	310	310	0	0	99	99	0	0

Group of Substances	Compounds	Raw Milk 2005/2006				Raw Colostrum 2005/2006			
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Acaricides	Triazophos	310	310	0	0	99	99	0	0
	Bromopropoxylate	310	310	0	0	99	99	0	0
	Chlorobenzilate	310	310	0	0	99	99	0	0
	Propargite	310	310	0	0	99	99	0	0
	Tebufenpyrad	310	310	0	0	99	99	0	0
	Tetradifon	310	310	0	0	99	99	0	0
	Buprofezin	310	310	0	0	99	99	0	0
	Cholinesterase sensitive Organophosphates	310	310	0	0	99	99	0	0
Fungicides	Azaconazole	310	310	0	0	99	99	0	0
	Benalaxyl	310	310	0	0	99	99	0	0
	Bitertanol	310	310	0	0	99	99	0	0
	Bupirimate	310	310	0	0	99	99	0	0
	Captan	310	310	0	0	99	99	0	0
	Chlorothalonil	310	310	0	0	99	99	0	0
	Chlozolinate	310	310	0	0	99	99	0	0
	Cyproconazole	310	310	0	0	99	99	0	0
	Cyprodinil	310	310	0	0	99	99	0	0
	Dicloran	310	310	0	0	99	99	0	0
	Difenoconazole	310	310	0	0	99	99	0	0
	Dimethomorph	310	310	0	0	99	99	0	0
	Diphenylamine	310	309	1*	0	99	99	0	0
	Etridiazole	310	310	0	0	99	99	0	0

Group of Substances	Compounds	Raw Milk 2005/2006				Raw Colostrum 2005/2006			
		number				number			
		Samples <sup>1</sup>	Not Detected	Detected <sup>2</sup> below MRL	Non-conforming <sup>3</sup>	Samples <sup>1</sup>	Not Detected	Detected <sup>2</sup> below MRL	Non-conforming <sup>3</sup>
	Fenarimol	310	310	0	0	99	99	0	0
	Fenpiclonil	310	310	0	0	99	99	0	0
	Fenpropomorph	310	310	0	0	99	99	0	0
	Fludioxonil	310	310	0	0	99	99	0	0
	Flusilazole	310	310	0	0	99	99	0	0
	Flutriafol	310	310	0	0	99	99	0	0
	Folpet	310	310	0	0	99	99	0	0
	Furalaxyl	310	310	0	0	99	99	0	0
	Hexaconazole	310	310	0	0	99	99	0	0
	Iprodione	310	310	0	0	99	99	0	0
	Metalaxyl	310	310	0	0	99	99	0	0
	Nitrothal isopropyl	310	310	0	0	99	99	0	0
	Oxadixyl	310	310	0	0	99	99	0	0
	Penconazole	310	310	0	0	99	99	0	0
	Pencycuron	310	310	0	0	99	99	0	0
	Prochloraz	310	310	0	0	99	99	0	0
	Procymidone	310	310	0	0	99	99	0	0
	Propiconazole	310	310	0	0	99	99	0	0
	Pyrimethanil	310	310	0	0	99	99	0	0
	Quintozene	310	310	0	0	99	99	0	0
	Tebuconazole	310	310	0	0	99	99	0	0
	Tolyfluanid	310	310	0	0	99	99	0	0
	Triadimefon	310	310	0	0	99	99	0	0
	Triadimenol	310	310	0	0	99	99	0	0
	Vinclozolin	310	310	0	0	99	99	0	0

Group of Substances	Compounds	Raw Milk 2005/2006				Raw Colostrum 2005/2006			
		number				number			
		Samples <sup>1</sup>	Not Detected	Detected <sup>2</sup> below MRL	Non-conforming <sup>3</sup>	Samples <sup>1</sup>	Not Detected	Detected <sup>2</sup> below MRL	Non-conforming <sup>3</sup>
Herbicides	Acetochlor	310	310	0	0	99	99	0	0
	Alachlor	310	310	0	0	99	99	0	0
	Chlornitrofen	310	310	0	0	99	99	0	0
	Chlorthal-dimethyl	310	310	0	0	99	99	0	0
	Clomazone	310	310	0	0	99	99	0	0
	Cyanazine	310	310	0	0	99	99	0	0
	Diflufenican	310	310	0	0	99	99	0	0
	Dimethanamid	310	310	0	0	99	99	0	0
	Diphenamid	310	310	0	0	99	99	0	0
	EPTC	310	310	0	0	99	99	0	0
	Flamprop-methyl	310	310	0	0	99	99	0	0
	Fluazifop-p-butyl	310	310	0	0	99	99	0	0
	Fluometuron	310	310	0	0	99	99	0	0
	Haloxyfop-methyl	310	310	0	0	99	99	0	0
	Hexazinone	310	310	0	0	99	99	0	0
	Isopropufuron	310	310	0	0	99	99	0	0
	Linuron	310	310	0	0	99	99	0	0
	Metolachlor	310	310	0	0	99	99	0	0
	Metribuzin	310	310	0	0	99	99	0	0
	Napropamide	310	310	0	0	99	99	0	0
	Norfluorazon	310	310	0	0	99	99	0	0
	Oxadiazon	310	310	0	0	99	99	0	0
	Oxyfluorfen	310	310	0	0	99	99	0	0
Pendimethalin	310	310	0	0	99	99	0	0	
Prometryn	310	310	0	0	99	99	0	0	

Group of Substances	Compounds	Raw Milk 2005/2006				Raw Colostrum 2005/2006			
		Samples <sup>1</sup>	number			Samples <sup>1</sup>	number		
			Not Detected	Detected <sup>2</sup> below MRL	Non-conforming <sup>3</sup>		Not Detected	Detected <sup>2</sup> below MRL	Non-conforming <sup>3</sup>
Other Pesticides	Propachlor	310	310	0	0	99	99	0	0
	Propazine	310	310	0	0	99	99	0	0
	Propyzamide	310	310	0	0	99	99	0	0
	Quizaolofop-ethyl	310	310	0	0	99	99	0	0
	Simazine	310	310	0	0	99	99	0	0
	Terbacil	310	310	0	0	99	99	0	0
	Terbuthylazine	310	310	0	0	99	99	0	0
	Terbutym	310	310	0	0	99	99	0	0
	Trialkoxydim	310	310	0	0	99	99	0	0
	Triallate	310	310	0	0	99	99	0	0
	Benodanil	310	310	0	0	99	99	0	0
	Binapacryl	310	310	0	0	99	99	0	0
	Chlorfluazuron	310	310	0	0	99	99	0	0
	Epoxyconazole	310	310	0	0	99	99	0	0
	Inoxacarb	310	310	0	0	99	99	0	0
	Kresoxim-methyl	310	310	0	0	99	99	0	0
	Nitrofen	310	310	0	0	99	99	0	0
	Paclobutrazol	310	310	0	0	99	99	0	0
	Pyriproxifen	310	310	0	0	99	99	0	0
Trifloxystrobin	310	310	0	0	99	99	0	0	
Group B(3)(c )									
Chemical elements	Arsenic	155	155	0	0	50	50	0	0
	Boron	155	155	0	0	50	50	0	0
	Cadmium	155	155	0	0	50	50	0	0
	Lead	155	155	0	0	50	50	0	0

Group of Substances	Compounds	Raw Milk 2005/2006				Raw Colostrum 2005/2006			
		number	number	number	number	number	number	number	number
		Samples <sup>1</sup>	Not Detected	Detected <sup>2</sup> below MRL	Non-conforming <sup>3</sup>	Samples <sup>1</sup>	Not Detected	Detected <sup>2</sup> below MRL	Non-conforming <sup>3</sup>
	Mercury	155	155	0	0	50	50	0	0
	Selenium	155	155	0	0	50	50	0	0
Group 3(d)									
Mycotoxins	Aflatoxin M	100	95	5*	0	50	49	1	0
<b>Total analyses<sup>4</sup></b>		<b>72,055</b>	<b>71,995</b> <b>99.92%</b>	<b>59</b> <b>0.08%</b>	<b>1</b> <b>0.00%</b>	<b>22,882</b>	<b>22,815</b> <b>99.71%</b>	<b>67</b> <b>0.29%</b>	<b>0</b> <b>0.00%</b>

**Notes:**

1. Samples: total number of individual batches sampled in the period covered
  2. Detections: number of detections at or below the MRL. In some cases no limit applies.
  3. Non-conforming results: detection of a compound above the New Zealand MRL maximum limit for a residue or contaminant, or detection of a compound not permitted for food producing animals.
  4. Number analyses: total number of analyses completed in the period covered (ie samples x tests).
- \* One or more of the farm gate results may have exceeded an importing country mrl, but the product manufactured met the market requirement.