

# Reference Material Current Stock Summary

Valid Date: **July 2016**

Version: **3**

**Reference Values:** Values shown have been generated by the DairyChek ILCP. The result provided in this summary is the simple mean of results after exclusion of statistical outliers. Each reference material purchased is provided with a Certificate of Analysis.

**Non-Reference Values:** For those reference where the results for a given property do not meet statistical criteria for reference values, summary values have not been provided as denoted by “-“. However, raw data for these tests may be available upon request.

**Sample Sizes:** Available sample sizes are shown for each material.

## AMF

PRM	6808-C-1	7278-C-1	7279-C-1	7280-C-1
Expiry	01/12/16	27/02/17	27/02/17	27/02/17
Sample sizes	125mL	125mL	125mL	125mL
Alkalinity (mg/kg)	6	8	8	7
Carotene (mg/kg)	11.4	9.5	9.5	9.6
Free Fatty Acids (%)	0.18	0.15	0.15	0.15
Moisture KF (%)	0.04	0.05	0.05	0.05
Peroxide Value (meqO <sub>2</sub> /kg)	0.04	0.03	0.03	0.03

## Butter – Salted

PRM	6939-C-2	6813-C-3
Expiry	23/08/16	26/10/16
Sample sizes	50g	50g
Fat by Difference (%)	81.67	82.05
Moisture (%)	15.63	15.51
Salt (%)	1.44	1.39
SNF (%)	2.67	2.37

## Butter – Unsalted

PRM	6820-C-1	6818-C-1	6816-C-3	6814-C-2
Expiry	23/08/16	22/09/16	26/10/16	24/11/16
Sample sizes	50g	50g	50g	50g
Fat by Difference (%)	83.11	82.99	83.09	83.12
Moisture (%)	15.59	15.50	15.56	15.58
SNF (%)	1.27	1.48	1.30	1.27

## Buttermilk Powder

PRM	6877-C-2	6878-C-2
Expiry	06/12/16	06/12/16
Sample sizes	100g/20g	100g/20g
Moisture 102°C (%)	3.65	3.66
Moisture Reference Dryer (%)	3.68	3.68
Fat RG (%)	10.9	10.9
Insolubility Index (mL)	0.110	0.100
Protein – Kjeldahl (%)	32.4	32.5
Titrateable Acidity (%)	0.0992	0.0983

## Casein (Chem)

Product Type	Lactic Acid	Mineral Acid	Lactic Acid	Lactic Acid
PRM	6945-C-2	6856-C-1	6854-C-1	7425-C-2
Expiry	28/09/16	23/12/17	02/03/18	09/10/18
Sample sizes	170g/20g	170g/20g	170g/20g	170g/20g
Alkali Requirement (mL/g)	-	-	5.70	5.50
Ash (%)	1.75	1.8	1.7	1.7
Bulk Density (g/mL)	0.643	0.70	0.69	0.69
Fat SBR (%)	0.893	0.6	0.7	0.8
Free Acidity (mL/g)	0.171	0.07	0.07	0.08
Lactose (%)	0.130	0.04	0.03	0.07
Moisture 102°C (%)	10.7	8.95	8.52	11.67
pH (pH units)	4.09	4.4	4.2	4.8
Protein Kjeldahl (%)	87.1	89.74	90.04	86.75

## Casein (Particle Size)

Product Type	Lactic Acid	Mineral Acid	Lactic Acid	Lactic Acid
PRM	6946-C-2	6857-C-1	6855-C-1	7426-C-2
Expiry	28/09/16	23/12/17	02/03/18	09/10/18
Sample sizes	20g	20g	20g	20g
Part size – 1 <sup>st</sup> sieve (%)	99.7	100.0	100.0	99.9
Part size – 2 <sup>nd</sup> sieve (%)	55.2	41.2	36.6	43.8

## Caseinate – Calcium Caseinate

PRM	6032-C-1	6912-C-2	6913-C-2
Expiry	30/11/16	14/01/17	14/01/17
Sample sizes	170g/20g	170g/20g	170g/20g
Ash (%)	3.90	4.0	4.1
Bulk Density (g/mL)	0.38	0.34	0.34
Calcium (%m/m)	1.44	1.53	1.52
Fat SBR (%)	0.60	0.6	0.6
Lactose (%)	0.09	0.07	0.06
Moisture 102°C (%)	4.95	4.83	4.79
pH (pH units)	7.12	7.11	7.09
Protein Kjeldahl (%)	91.78	91.33	91.66

### Caseinate – Sodium Caseinate

PRM	5318-C-1	6149-C-2	6033-C-1	6914-C-2	6915-C-2
Expiry	03/08/16	09/08/16	31/01/17	11/04/17	11/04/17
Sample sizes	20g	170g/20g	20g	170g/20g	170g/20g
Ash (%)	3.6	3.76	3.73	3.6	3.6
Bulk Density (g/mL)	0.56	0.442	0.44	0.450	0.448
Fat SBR (%)	0.7	0.606	0.72	0.6	0.6
Lactose (%)	0.04	0.0519	0.05	0.05	0.05
Moisture 102°C (%)	4.65	4.56	5.00	4.87	4.85
Calcium (%m/m)	0.03*	-	0.01*	-	-
pH (pH units)	6.77	6.82	6.78	6.77	6.79
Protein Kjeldahl (%)	91.90	91.9	91.81	91.63	92.03

### Cheese

Product Type	Gouda	Mozzarella	Cheddar
PRM	6835-C-1	7588-C-1	7590-C-1
Expiry	20/02/17	19/04/17	10/04/17
Sample sizes	75g	75g	75g
Calcium (mmol/kg)	-	171	184
Fat SBR (%)	30.01	23.65	36.22
Moisture 105°C (%)	40.3	47.5	35.2
pH (pH units)	5.56	5.71	5.22
Protein (%)	24.86	24.21	23.81
Salt (%)	1.65	1.38	1.65

### Micronutrients – Protein Products (Minerals / Trace Elements)

Product Type	WPC (Rennet)	WPC (Rennet)
PRM	6890-C-3	2334-C-2
Expiry	19/01/17	28/01/17
Sample sizes	20g	20g
Calcium (mg/100g)	255	255.97
Chloride (mg/100g)	107	49.47
Copper (mg/kg)	0.51	0.76
Iron (mg/kg)	3.6	8.24
Magnesium (mg/100g)	16.4	53.22
Manganese (µg/100g)	9	7.09
Phosphorus (mg/100g)	310	305.59
Potassium (mg/100g)	1516	715.39
Sodium (mg/100g)	27	367.25
Zinc (mg/kg)	11.5	2.22

## Micronutrients – Milk Powder (Minerals / Trace Elements)

Product Type	Nutr IF Base	Nutr IF Base	Nutr WMP	SMP	WMP	Nut WMP
PRM	6206-C-1	6207-C-1	7089-C-1	7214-C-2	7215-C-3	7090-C-1
Expiry	28/08/16	29/08/16	11/01/17	15/03/17	11/04/17	20/12/17
Sample sizes	20g	20g	20g	20g	20g	20g
Calcium (mg/100g)	549.62	557	837	1226	865	838
Chloride (mg/100g)	571.60	571	846	1232	867	644
Copper (mg/kg)	4.24	4.25	-	0.20	0.20	0.20
Iron (mg/kg)	57.37	57.8	1.61	1.6	81.5	-
Magnesium (mg/100g)	61.87	62.2	83.2	134.9	91.3	74.8
Manganese (µg/100g)	185.77	186	20.6	26	33	22
Phosphorus (mg/100g)	345.46	354	692	947	664	653
Potassium (mg/100g)	647.08	654	1310	1769	1102	1065
Sodium (mg/100g)	167.92	172	274	457	324	217
Zinc (mg/kg)	52.18	52.3	25.4	33.1	26.8	27.0

Product Type	Nut SMP	Nutr SMP	Nut WMP	Nutr SMP	Nutr WMP
PRM	6892-C-1	5331-C-1	5328-C-1	5944-C-1	5936-C-1
Expiry	15/02/18	12/08/18	22/08/18	25/11/18	25/11/18
Sample sizes	20g	20g	20g	20g	20g
Calcium (mg/100g)	1127	1179.47	892	1137	855
Chloride (mg/100g)	1017	877.30	719	825	681
Copper (mg/kg)	0.19	0.57	0.40	0.45	0.43
Iron (mg/kg)	1.8	1.88	1.7	1.5	1.4
Magnesium (mg/100g)	102.3	101.11	81.4	96	74
Manganese (µg/100g)	28	20.05	19	27	22
Phosphorus (mg/100g)	832	971.41	770	939	742
Potassium (mg/100g)	1343	1540.06	1267	1466	1204
Sodium (mg/100g)	356	329.82	270	283	238
Zinc (mg/kg)	35.3	39.14	27.4	34.2	25.7

## Milk Powder – Functional Properties (= Median Values)

Product Type	IWMP	IWMP	IWMP	IWMP	IWMP	IWMP
PRM	6941-C-1	6942-C-1	6943-C-1	7526-C-1	7527-C-1	7528-C-1
Expiry	23/08/16	23/08/16	23/08/16	26/10/16	26/10/16	26/10/16
Sample sizes	170g	170g	170g	170g	170g	170g
Coffee Sediment (mL)	0.6	0.6	0.6	0.4	0.4	0.4
Cold SDP (A – E)	C	C	C	D	C	C
Dispersibility (1 – 7)	1	1	1	1	1	2
Sediment 85 (mL)	0.2	0.2	0.2	0.2	0.2	0.2
Wettability (secs)	8	8	8	7	7	8

### Milk Powder – Bulk Density

Product Type	WMP	WMP	SMP	BMP	WMP
PRM	7504-C-1	7503-C-1	7505-C-1	7546-C-1	7542-C-1
Expiry	23/08/16	23/08/16	23/08/16	26/10/16	26/10/16
Sample sizes	170g	170g	170g	170g	170g
Bulk Density (g/mL)	0.50	0.59	0.50	0.75	0.63

### Milk Powder – Vitamins

Product Type	WMP	SMP	WMP
PRM	6898-C-2	6899-C-3	6900-C-3
Expiry	23/08/16	20/10/16	20/10/16
Sample sizes	20g	20g	20g
Vitamin A (µg/100g)	448	968	450
Vitamin C (mg/100g)	71.8	14.0	65.5
Vitamin D (µg/100g)	7.4	8.4	7.4

### Milk Powder – WPNI Standards

PRM	7055-C-1	2385-C-1	2387-C-1
Expiry	27/12/16	17/10/17	14/11/17
Sample sizes	20g	20g	20g
WPNI (mg/g)	4.23 +/- 0.05	6.48 +/- 0.06	0.44 +/- 0.05

### Milk Protein Concentrate (MPC 42 - 70)

Product Type	MPC42	MPC42	MPC56	MPC56	MPC70
PRM	6840-C-2	6843-C-1	6841-C-2	7422-C-1	6842-C-1
Expiry	17/09/16	19/08/17	12/11/16	14/08/17	21/08/18
Sample sizes	20g/170g	20g/170g	20g/170g	20g/170g	20g/170g
Ash (%)	5.57	5.6	7.5	7.5	7.3
Bulk Density (g/mL)	0.606	0.59	0.70	0.68	0.58
Fat RG (%)	26.2	26.03	0.89	1.10	1.10
Insolubility Index (mL)	0.207	0.31	0.10	0.10	0.30
Moisture 102°C (%)	3.36	3.30	5.04	4.99	4.60
pH (pH units)	6.96	6.93	6.94	6.88	6.94
Protein Kjeldahl (%)	42.8	43.11	55.99	56.05	69.93
Titrateable Acidity (%m/m)	0.811	0.82	1.05	1.15	1.11
WPNI (mg/g)	6.53	6.6	9.5	-	12.0

### Milk Protein Concentrate (MPC 80 - 85 / MPI)

Product Type	MPC80	MPC80	MPC85	MPI
PRM	6836-C-2	6839-C-1	7423-C-1	6838-C-1
Expiry	05/10/16	09/12/16	19/12/17	19/08/17
Sample sizes	20g	20g/170g	20g/170g	20g/170g
Ash (%)	7.21	7.1	7.0	6.8
Bulk Density (g/mL)	0.427	0.44	0.41	0.37
Fat SBR (%)	1.28	1.26	1.35	1.22
Lactose (%)	7.00	-	5.28	1.87
Moisture 102°C (%)	5.33	6.00	5.86	6.02
pH (pH units)	6.99	6.97	7.01	7.00
Protein Kjeldahl (%)	79.1	77.79	80.39	84.38
WPNI (mg/g)	1.56	-	-	15.8

### Nitrate/Nitrite (Nox) - Milk Powder

Product Type	BMP	WMP
PRM	6863-C-2	6864-C-2
Expiry	23/02/17	23/02/17
Sample sizes	20g	20g
Nitrate mg/kg	73.8	1.3
Nitrite mg/kg	0.3	2.3

### Nitrate/Nitrite (Nox) - Protein Powder

Product Type	Lactic Acid Casein	Calcium Caseinate	Calcium Caseinate	Lactic Acid Casein	Lactic Acid Casein	WPC 80 (Hifat)
PRM	6317-C-4	6306-C-4	6307-C-2	6316-C-3	6860-C-1	6859-C-1
Expiry	22/09/16	22/09/16	22/09/16	22/09/16	24/05/17	24/05/17
Sample sizes	20g	20g	20g	20g	20g	20g
Nitrate (mg/kg)	26.9	10.4	10.7	27.0	16.0	12.9
Nitrite (mg/kg)	0.2	2.49	2.52	0.3	0.3	0.1

### Skim Milk Powder

PRM	6896-C-2	7580-C-1	7581-C-1
Expiry	26/03/18	03/09/18	07/10/18
Sample sizes	100g/20g	100g/20g	100g/20g
Fat RG (%)	0.89	0.88	0.83
Insolubility Index (mL)	0.09	0.12	0.13
Moisture 102 (%)	3.87	3.88	3.83
Moisture Reference Dryer (%)	-	-	-
Protein Combustion (%)	32.74	-	-
Protein Kjeldahl (%)	32.60	32.63	32.65
Titrateable Acidity (%)	0.10	0.10	0.12
WPNI (mg/g)	6.4	6.4	6.1

## Whey Powder

PRM	6851-C-1	6850-C-1	6853-C-2	6852-C-2
Expiry	26/11/17	03/03/18	05/09/18	22/09/18
Sample sizes	170g/20g	170g/20g	170g/20g	170g/20g
Ash (%)	7.65	8.07	7.82	7.75
Fat RG (%)	0.802	1.05	0.89	0.94
Insolubility Index (mL)	0.0714	0.0786	0.09	0.08
Moisture 102°C (%)	1.93	1.90	1.59	1.66
pH (pH units)	6.80	6.93	6.81	6.75
Protein Kjeldahl (%)	13.9	15.5	15.69	15.78
Salt (%)	2.37	2.90	2.13	2.17
Titrateable Acidity (%)	0.0530	0.0430	0.06	0.06

## Whole Milk Powder

PRM	6870-C-1	6935-C-2	6876-C-2	6874-C-1	6875-C-2
Expiry	12/12/16	11/04/17	11/04/17	14/04/17	04/05/17
Sample sizes	20g/100g	20g/100g	20g/100g	20g/100g	20g/100g
Ash (%)	5.79	5.17	4.80	4.85	5.43
Fat RG (%)	26.0	28.33	28.09	28.42	26.40
Free Fat (%)	1.24	1.52	1.97	1.97	0.67
Insolubility Index (mL)	-	0.13	0.18	0.12	0.10
Moisture KF (%)	3.49	3.27	3.38	3.29	3.56
Moisture 102°C (%)	3.13	2.92	3.05	2.98	3.19
Moisture Reference Dryer (%)	-	3.06	3.17	-	3.32
Protein Combustion (%)	24.5	23.91	23.95	23.91	24.34
Protein Kjeldahl (%)	24.3	23.70	23.78	23.73	24.16
Titrateable Acidity (%)	0.105	0.10	0.09	0.08	0.09
WPNI (mg/g SNF)	0.712	3.0	3.2	2.8	3.9

## WPC

PRM	6848-C-1	6845-C-1	6847-C-2	6849-C-2	7424-C-2
Expiry	04/12/16	30/12/16	22/12/17	01/01/17	15/10/17
Sample sizes	20g/175g	20g	20g	20g/175g	20g/175g
Ash (%)	2.7	3.50	3.0	3.5	4.1
Bulk Density (g/mL)	0.41	0.454	0.55	0.44	0.52
Fat SBR (%)	5.2	3.49	5.5	3.2	5.6
Insolubility Index (mL)	0.11	0.0914	0.10	0.08	0.08
Lactose (%)	5.2	3.76	5.3	3.9	5.5
Moisture 102°C (%)	5.10	5.06	4.93	5.11	5.39
pH (pH units)	6.49	6.71	6.76	6.77	6.70
Protein Kjeldahl (%)	78.88	81.2	78.45	81.40	77.53