



Feed Test Interpretation

2022 Poultry Service Industry Workshop

Banff, AB

October 7, 2022

Feed Test Results Came Back... now what???



Phone: 204.237.9128
 Fax: 855.754.1046
 Toll Free: 877.955.7861
 Email: info@ctl.mb.ca
 Website: www.ctl.mb.ca

Unit 9 - 851 Lagimodiere Blvd.
 Winnipeg, MB
 R2J 3K4

CTL-TRT Rev 1.0 Revised: August 28, 2015

Laboratory #:
 614408

TEST REPORT

Submitted By:	
Poultry Partners Inc. 20 East Lake Ave NE Airdrie, AB T4A 2G8 Attn: Christina Rose	Phone #: 587-360-0889 Fax #: 403-948-5837 Date Received: September 19, 2022 Date Printed: September 22, 2022

Client: Package #: 3R;CHLORIDE
Product: RATION Complete
Description: LAYER Sample #: PP3178
 18.5% - East Sept. 5/22

Arrival Condition: Sample Intact

Analysis:	As Received	Dry Matter
Moisture (%) (test date 09/20/22)	10.17	
Dry Matter (%) (test date 09/20/22)	89.83	
Crude Protein (%) (test date 09/20/22)	17.91	19.94
Crude Fibre (%) (test date 09/22/22)	2.30	2.56
Fat (%) (test date 09/21/22)	5.53	6.16
Ash (%) (test date 09/21/22)	11.15	12.41
Calcium (%) (test date 09/22/22)	3.87	4.30
Phosphorus (%) (test date 09/22/22)	0.55	0.61
Magnesium (%) (test date 09/22/22)	0.21	0.23
Potassium (%) (test date 09/22/22)	0.55	0.62
Sodium (%) (test date 09/22/22)	0.13	0.15
Copper (mg/kg) (test date 09/22/22)	13.41	14.93
Iron (mg/kg) (test date 09/22/22)	275.57	306.76
Manganese (mg/kg) (test date 09/22/22)	140.60	156.52
Zinc (mg/kg) (test date 09/22/22)	129.40	144.05
Chloride (%) (test date 09/21/22)	0.19	0.21



Down To Earth Labs

The Science of Higher Yields

Report #: 132067 **Project:**
Report Date: 2022-07-14 **PO:**
Received: 2022-07-11 **Grower:**
Completed: 2022-07-14 **Field:**
Test Package: FD9 **Animal:** Poultry

Sample	ID	Type	Analysis	Dry Basis Result	As Fed Result	Units
220711M006	Bin 1	Ration	Moisture	10.04	10.04	%
			Protein	16.45	14.80	%
			Crude Fat	6.85	6.16	%
			Crude Fiber	10.63	9.56	%
			Dry Ash	13.2	11.90	%
			Potassium	0.82	0.74	%
			Phosphorous	0.61	0.55	%
			Calcium	4.76	4.28	%
			Magnesium	0.280	0.25	%
			Copper	24.9	22.40	ppm
			Manganese	221	199.00	ppm
			Zinc	224	202.00	ppm
			Sodium	0.26	0.23	%
			Iron	268	241.00	ppm
			Sulfur	0.17	0.15	%
			ME	N/A	N/A	Mcal/kg
			NFF	52.8	47.50	%

Feed Test Results Came Back... now what???



Feed Test Results Came Back... now what???

❖ 5 Simple Rules to understand feed test results

1. Type & Stage of Bird – Breed Recommendations
2. Do you have the formulation for that feed?
3. If not - get the feed label
4. Grab the Feeds Act
5. Was this a routine QC check or is there an issue on farm?

So here we go!

Product: RATION

Complete

Description: LAYER

Sample #: PP3178

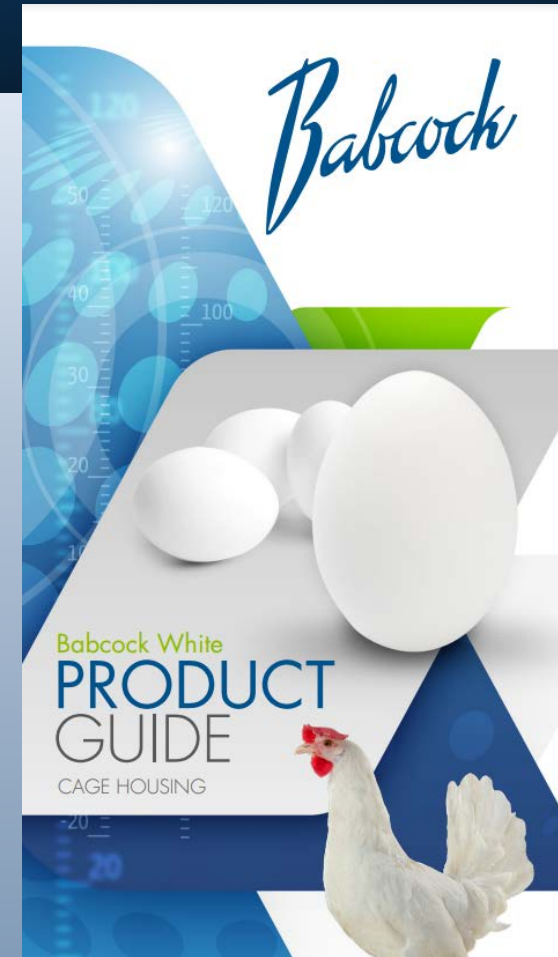
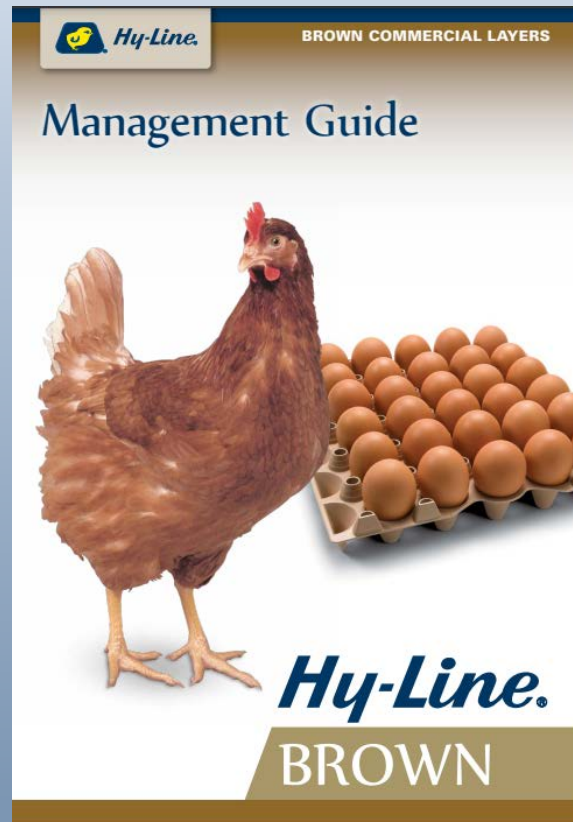
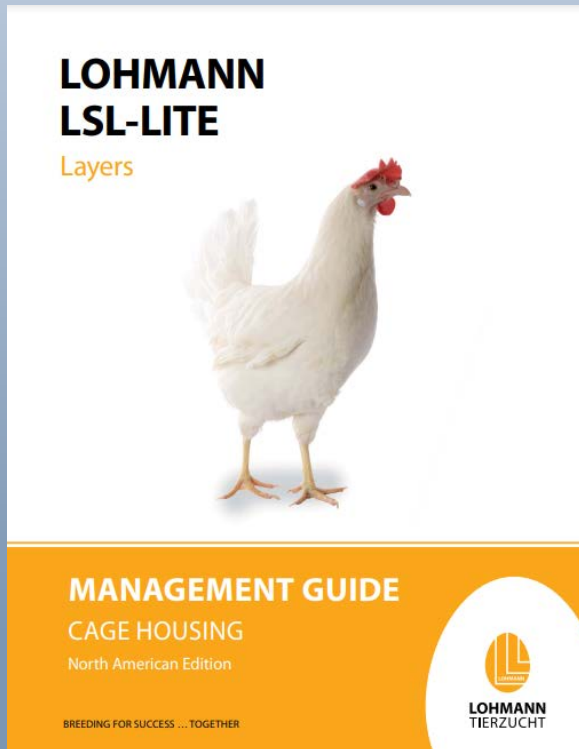
18.5% - East Sept. 5/22

Arrival Condition: Sample Intact

Analysis:	As Received	Dry Matter
Moisture (%) (test date 09/20/22)	10.17	
Dry Matter (%) (test date 09/20/22)	89.83	
Crude Protein (%) (test date 09/20/22)	17.91	19.94
Crude Fibre (%) (test date 09/22/22)	2.30	2.56
Fat (%) (test date 09/21/22)	5.53	6.16
Ash (%) (test date 09/21/22)	11.15	12.41
Calcium (%) (test date 09/22/22)	3.87	4.30
Phosphorus (%) (test date 09/22/22)	0.55	0.61
Magnesium (%) (test date 09/22/22)	0.21	0.23
Potassium (%) (test date 09/22/22)	0.55	0.62
Sodium (%) (test date 09/22/22)	0.13	0.15
Copper (mg/kg) (test date 09/22/22)	13.41	14.93
Iron (mg/kg) (test date 09/22/22)	275.57	306.76
Manganese (mg/kg) (test date 09/22/22)	140.60	156.52
Zinc (mg/kg) (test date 09/22/22)	129.40	144.05
Chloride (%) (test date 09/21/22)	0.19	0.21

Rule #1

❖ Type & Stage of Bird



Rule #1

NUTRITION

Table 9: Recommended Nutrient Levels for LOHMANN LSL-LITE Layers in Phase 1 for Different Daily Feed Consumptions

(approx. 50% Production to 40 weeks)*

Nutrient		Daily Feed Consumption /Hen			
		95 g (20.9 lbs./100 birds)	100 g** (22.0 lbs./100 birds)	105 g (23.2 lbs./100 birds)	110 g (24.3 lbs./100 birds)
Protein	%	18.57	17.64	16.80	16.04
Calcium***	%	4.32	4.10	3.90	3.73
Phosphorus****	%	0.66	0.63	0.60	0.57
Av. Phosphorus	%	0.46	0.44	0.42	0.40
Sodium	%	0.19	0.18	0.17	0.16
Chlorine	%	0.19	0.18	0.17	0.16
Lysine	%	0.87	0.82	0.79	0.75
Dig. Lysine	%	0.71	0.68	0.64	0.61
Methionine	%	0.43	0.41	0.39	0.37
Dig. Methionine	%	0.35	0.33	0.32	0.30
Meth./Cyst.	%	0.78	0.74	0.71	0.67
Dig. M/C	%	0.64	0.61	0.58	0.55
Arginine	%	0.89	0.85	0.81	0.77
Dig. Arginine	%	0.73	0.70	0.66	0.63
Valine	%	0.73	0.69	0.66	0.63
Dig. Valine	%	0.62	0.59	0.56	0.53
Tryptophan	%	0.19	0.18	0.17	0.16
Dig. Tryptophan	%	0.15	0.15	0.14	0.13
Threonine	%	0.60	0.57	0.55	0.52
Dig. Threonine	%	0.50	0.47	0.45	0.43
Isoleucine	%	0.69	0.66	0.63	0.60
Dig. Isoleucine	%	0.57	0.54	0.51	0.49
Linoleic Acid	%	2.32	2.20	2.10	2.00

LOHMANN LSL-LITE

Layers



MANAGEMENT GUIDE

CAGE HOUSING

North American Edition



LOHMANN
TIERZUCHT

BREEDING FOR SUCCESS ... TOGETHER

* Until the maximum daily egg mass is reached, please refer to table 21.

** equals daily intake requirement of nutrient in g/hen or lbs. per 100 birds

*** See table 14 about relation of fine and coarse limestone.

**** without phytase

Rule #2

❖ Do you have the formulation?

Formula Code	Description	Date Stored				
120405	18.5% Layer Ration	7/21/2022				
Code	Ingredient Name	Amount	No.	Nutrient Name	Units	Actual
9013	Corn - 7.85% CP	320.00	26	DRY MATTER	%	89.75
9023	Wheat Cracks - 13.8% CP	180.00	600	Crude Fibre	%	2.69
9066	Soybean Meal - 46.7% CP	101.17	604	Starch	%	42.10
9019	Wheat - New 13.3% CP	97.67	608	Crude Fat	%	4.10
9034	Oat Thins - 16.2% CP	85.00	611	C18:2 Linoleic Acid	%	1.28
9071	Canola Meal - 36.8% CP	55.00	622	AME Poultry	kcal/kg	2,881
9201	Poultry Grit	50.00	634	Crude Protein	%	18.74
9106	Ruminant MBM_RESTRICTED	48.14	648	Total Lysine	%	0.890
9200	Limestone	39.55	649	Total Threonine	%	0.680
9157	Canola Oil	15.02	650	Total Methionine	%	0.495
10613	Layer & Pullet Micro 2.0 kg	2.00	651	Total Meth & Cyst	%	0.885
9178	Methionine - DL	1.99	652	Total Tryptophan	%	0.208
9220	Salt	1.53	653	Total Isoleucine	%	0.670
9386	Choline Chloride 60%	1.00	654	Total Valine	%	0.842
9677	Sodium Bicarbonate	1.00	655	Total Arginine	%	1.099
9175	Lysine HCL (78.8%)	0.81	658	Total Histidine	%	0.311
9184	L-Threonine	0.12	710	Calcium	%	4.32
			711	Phosphorus	%	0.66
			713	Avail P	%	0.55
			714	Phytase	FTU/k	500.00
			716	Ca:P	ratio	6.50
			720	Salt	%	0.30
			721	Sodium	%	0.16
			722	Potassium	%	0.58
			723	Chloride	%	0.20
			724	Magnesium	%	0.17
			725	Sulphur	%	0.19
			728	D.E.B.	Meq/k	159.7449
			732	Iron (T)	mg/kg	188
			736	Zinc (A)	mg/kg	75
			739	Copper (A)	mg/kg	10
			742	Manganese (A)	mg/kg	100
			744	Colbalt (T)	mg/kg	0.04
			747	Iodine (T)	mg/kg	1.128
			751	Selenium (A)	mg/kg	0.250
			761	Vitamin A (A)	KIU/kg	10.000
			765	Vitamin D3 (A)	KIU/kg	4.200
			767	Vitamin E (A)	IU/kg	70.0

Rule #3

❖ What about a feed label?

BLUE SKY FEEDS **18.5% Layer Ration**

This feed contains added Selenium at 0.25 mg/kg.

INGREDIENTS:

A list of ingredients used in this feed may be obtained from the manufacturer or registrant.

GUARANTEED ANALYSIS:

Crude Protein (Min)	18.50 %
Crude Fat (Min)	3.50 %
Crude Fibre (Max)	5.00 %
Calcium (Actual)	4.25 %
Phosphorus (Actual)	0.66 %
Sodium (Actual)	0.15 %
Vitamin A (Min)	10,000 IU/kg
Vitamin D3 (Min)	4,200 IU/kg
Vitamin E (Min)	60 IU/kg

DIRECTIONS FOR USE:

Directions: Feed as the sole ration to laying hens in early production from approximately 28 weeks of age until approximately 34 weeks of age. If egg size is getting too large, then switch hens to the 120406 18.0% Layer Ration.

Warning:

1. This feed contains prohibited material. *Feeding this product to cattle, sheep, deer or other ruminants is illegal and is subject to fines or other punishment under the Health of Animals Act.*

Caution:

1. Direction for use must be carefully followed.

LIABILITY DISCLAIMER: Individual results from the use of this product may vary due to management, environment, genetic, health and sanitation differences, therefore individual results cannot be guaranteed.

Manufactured by:
Blue Sky Feeds
Flatlands, SK

Net weight: see invoice

Rule #3

❖ What about a feed label?

BLUE SKY FEEDS **18.5% Layer Ration**

This feed contains added Selenium at 0.25 mg/kg.

INGREDIENTS:

A list of ingredients used in this feed may be obtained from the manufacturer or registrant.

GUARANTEED ANALYSIS:

Crude Protein (Min)	18.50 %
Crude Fat (Min)	3.50 %
Crude Fibre (Max)	5.00 %
Calcium (Actual)	4.25 %
Phosphorus (Actual)	0.66 %
Sodium (Actual)	0.15 %
Vitamin A (Min)	10,000 IU/kg
Vitamin D3 (Min)	4,200 IU/kg
Vitamin E (Min)	60 IU/kg

DIRECTIONS FOR USE:

Directions: Feed as the sole ration to laying hens in early production from approximately 28 weeks of age until approximately 34 weeks of age. If egg size is getting too large, then switch hens to the 120406 18.0% Layer Ration.

Rule #4

❖ Grab the Feeds Act

SCHEDULE I
TABLE 1(s. 25)

Tolerances to be applied to the analysts' results on nutrients in feed under subsection 25(1)

Column I	Column II	Column III
Item	Guaranteed Amount	Permitted tolerances not to exceed
1 Calcium (Ca), Magnesium (Mg), Sodium (Na), Potassium (K), Sulphur (S), and Salt (NaCl)	(a) 1 per cent and under	A deficiency or excess of 0.2 per cent of the feed
	(b) Over 1 per cent	A deficiency or excess of 20 per cent of the guaranteed amount
2 Zinc (Zn), Copper (Cu), Manganese (Mn), Iodine (I), Cobalt (Co)	All amounts	A deficiency or excess of 20 per cent of the guaranteed amount
3 Fluorine (F)	All amounts	An excess of 20 per cent of the guaranteed amount
4 Phosphorus (P)	(a) 5 per cent and under	A deficiency or excess of 20 per cent of the guaranteed amount
	(b) Over 5 per cent	A deficiency of 10 per cent or an excess of 20 per cent of the guaranteed amount
5 Iron (Fe)	All amounts	A deficiency of 20 per cent or an excess of 40 per cent of the guaranteed amount
6 Crude protein (mixed feed)	(a) 24 per cent and under	A deficiency of 1.0 per cent of the feed
	(b) Over 24 per cent	A deficiency of 1.5 per cent of the feed
Crude protein (single ingredient feed)	All amounts	A deficiency of 0.8 per cent of the feed
7 Equivalent crude protein	(a) 5 per cent and under	An excess of 1.0 per cent of the feed
	(b) Over 5 per cent but up to and including 25 per cent	An excess of 20 per cent of the guaranteed amount
	(c) Over 25 per cent	An excess of 5 per cent of the feed
8 Crude fat	All amounts	A deficiency or excess of 0.5 per cent of the feed
9 Crude fibre	(a) 5 per cent and under	A deficiency or excess of 0.5 per cent of the feed
	(b) Over 5 per cent and up to and including 15 per cent	A deficiency or excess of 10 per cent of the guaranteed amount

Item	Guaranteed Amount	Permitted tolerances not to exceed
1 Calcium (Ca), Magnesium (Mg), Sodium (Na), Potassium (K), Sulphur (S), and Salt (NaCl)	(a) 1 per cent and under	A deficiency or excess of 0.2 per cent of the feed
	(b) Over 1 per cent	A deficiency or excess of 20 per cent of the guaranteed amount
2 Zinc (Zn), Copper (Cu), Manganese (Mn), Iodine (I), Cobalt (Co)	All amounts	A deficiency or excess of 20 per cent of the guaranteed amount
3 Fluorine (F)	All amounts	An excess of 20 per cent of the guaranteed amount
4 Phosphorus (P)	(a) 5 per cent and under	A deficiency or excess of 20 per cent of the guaranteed amount
	(b) Over 5 per cent	A deficiency of 10 per cent or an excess of 20 per cent of the guaranteed amount
5 Iron (Fe)	All amounts	A deficiency of 20 per cent or an excess of 40 per cent of the guaranteed amount
6 Crude protein (mixed feed)	(a) 24 per cent and under	A deficiency of 1.0 per cent of the feed
	(b) Over 24 per cent	A deficiency of 1.5 per cent of the feed
Crude protein (single ingredient feed)	All amounts	A deficiency of 0.8 per cent of the feed
7 Equivalent crude protein	(a) 5 per cent and under	An excess of 1.0 per cent of the feed
	(b) Over 5 per cent but up to and including 25 per cent	An excess of 20 per cent of the guaranteed amount
	(c) Over 25 per cent	An excess of 5 per cent of the feed
8 Crude fat	All amounts	A deficiency or excess of 0.5 per cent of the feed
9 Crude fibre	(a) 5 per cent and under	A deficiency or excess of 0.5 per cent of the feed
	(b) Over 5 per cent and up to and including 15 per cent	A deficiency or excess of 10 per cent of the guaranteed amount

Rule #5

❖ Routine QC or on-farm issue?

- Routine QC – looking for accuracy to formulation and consistency from test to test for that formula
- Bird performance issue is helpful to know when interpreting results
 - Flighty birds or cannibalism – Sodium & Chloride
 - Light birds or case weights – Protein
 - Rickets – Calcium and Phosphorus

The Process...

Product: RATION

Complete

Description: LAYER

Sample #: PP3178

18.5% - East Sept. 5/22

Arrival Condition: Sample Intact

Analysis:	As Received	Dry Matter
Moisture (%) (test date 09/20/22)	10.17	
Dry Matter (%) (test date 09/20/22)	89.83	
Crude Protein (%) (test date 09/20/22)	17.91	19.94
Crude Fibre (%) (test date 09/22/22)	2.30	2.56
Fat (%) (test date 09/21/22)	5.53	6.16
Ash (%) (test date 09/21/22)	11.15	12.41
Calcium (%) (test date 09/22/22)	3.87	4.30
Phosphorus (%) (test date 09/22/22)	0.55	0.61
Magnesium (%) (test date 09/22/22)	0.21	0.23
Potassium (%) (test date 09/22/22)	0.55	0.62
Sodium (%) (test date 09/22/22)	0.13	0.15
Copper (mg/kg) (test date 09/22/22)	13.41	14.93
Iron (mg/kg) (test date 09/22/22)	275.57	306.76
Manganese (mg/kg) (test date 09/22/22)	140.60	156.52
Zinc (mg/kg) (test date 09/22/22)	129.40	144.05
Chloride (%) (test date 09/21/22)	0.19	0.21

Compare the Numbers...

Nutrient	Test	Formula	Guide	Label	Tolerance
Crude Protein (%)	17.91	18.74	17.6 – 18.5	18.50	<17.50
Crude Fat (%)	5.53	4.10	---	3.50	3.50 – 4.50
Crude Fibre (%)	2.30	2.69	---	5.00	>5.50
Calcium (%)	3.87	4.32	4.10 – 4.32	4.25	3.40 – 5.10
Phosphorus (%)	0.55	0.66	0.63 – 0.66	0.66	0.53 – 0.79
Sodium (%)	0.13	0.16	0.18 – 0.19	0.15	0.12 – 0.18

Provide Interpretation

Criteria	Concentration	Units	Comments
Moisture	10.17	%	In the typical range for complete feed. No concerns.
Dry Matter	89.83	%	Related to the amount of moisture present. No concern.
Crude Protein	17.91	%	Slightly lower than target formulation but within breed recommendations and allowed tollerances.
Crude Fibre	2.30	%	This value falls within the acceptable range.
Crude Fat	5.53	%	Related to the amount of energy in the feed. Higher than target formulation.
Calcium	3.87	%	Slightly lower than breed recommendation (4.10%) but there can be variability in calcium levels with testing. No concerns at this level.
Phosphorus	0.55	%	This value falls lower than guide and formula but within the acceptable range.
Sodium	0.13	%	Slightly below the recommended breed range (0.18-0.19%) but agrees with formulation (once matrix value is accounted for). No concerns with this level.

Things To Watch Out For

- Some feed labs report in Dry Matter – need to convert to As Fed



CUMBERLAND VALLEY ANALYTICAL SERVICES

"Laboratory services for agriculture ... from the field to the feed bunk"

Type:
Farm:
Desc: PEAS

Copies to:

Lab ID: 29157 116
Sampled:
Arrived: 09/17/2020
Completed: 09/24/2020
Reported: 09/24/2020

Regression: OH

PEAS

SAMPLE INFORMATION

Lab ID: 29157 116 Series:
Crop Year: 2020 Version: 1.0
Cutting#:
Feed Type: Misc-unknown

CHEMISTRY ANALYSIS RESULTS

Moisture 15.2
Dry Matter 84.8

PROTEINS

	% SP	% CP	% DM
Crude Protein			24.4
Adjusted Protein			24.4
Soluble Protein		64.8	15.8
Ammonia (CPE)			
ADF Protein (ADICP)		0.6	0.15
NDF Protein (NDICP)		0.8	0.19
NDR Protein (NDRCP)			
Rumen Degr. Protein			

FIBER

	% NDF	% DM
ADF	57.6	7.4
aNDF		12.9
aNDFom		
NDR (NDF w/o sulfite)		
Crude Fiber		
Lignin	4.84	0.62
NDF Digestibility (12 hr)		
NDF Digestibility (24 hr)		
NDF Digestibility (30 hr)		
NDF Digestibility (72 hr)		
NDF Digestibility (240 hr)		
uNDF (30 hr)		
uNDF (240 hr)		

MINERALS

Ash (%DM)	3.70
Calcium (%DM)	0.11
Phosphorus (%DM)	0.46
Magnesium (%DM)	0.16
Potassium (%DM)	1.06
Sulfur (%DM)	
Sodium (%DM)	0.01
Chloride (%DM)	
Iron (PPM)	111
Manganese (PPM)	21
Zinc (PPM)	36
Copper (PPM)	10
Molybdenum (PPM)	

FERMENTATION

pH
Total VFA
Lactic Acid (%DM)
Lactic as % of Total VFA
Acetic Acid (%DM)
Propionic Acid (%DM)
Butyric Acid (%DM)
Isobutyric Acid (%DM)
1, 2 Propanediol (%DM)
Nitrate Ion (%DM)

ENERGY & INDEX CALCULATIONS

TDN (%DM)	82.2
Net Energy Lactation (Mcal/lb)	0.86
Net Energy Maintenance (Mcal/lb)	1.00
Net Energy Gain (Mcal/lb)	0.69
ME (Mcal/lb)	1.46
NDF Dig. Rate (Kd, %HR, Van Amburgh, Lignin*2.4)	

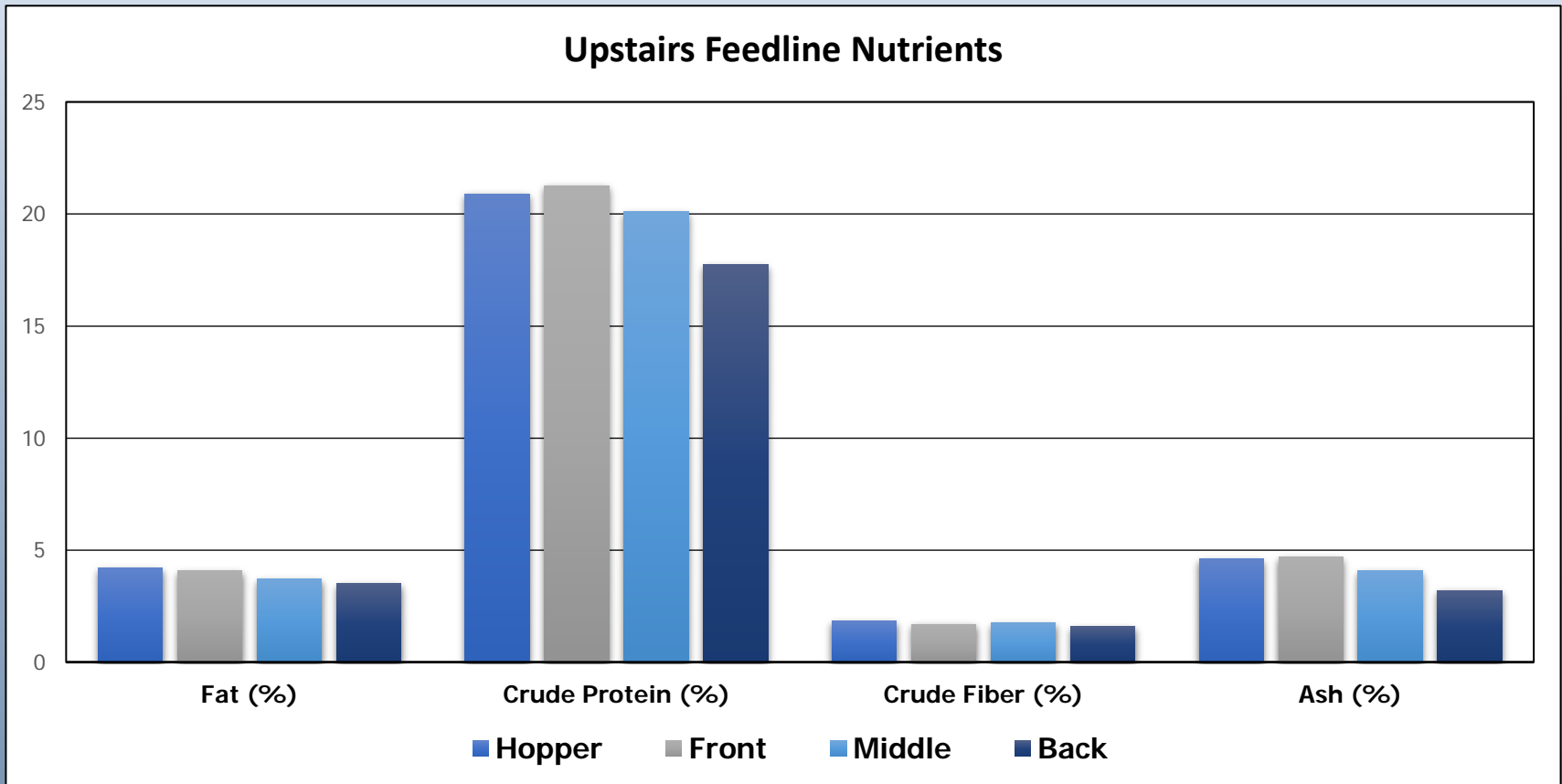
Things To Watch Out For

- Some feed labs report in Dry Matter – need to convert to As Fed
- Nutrient matrix for enzymes
 - Protein
 - Calcium
 - Phosphorus
 - Sodium

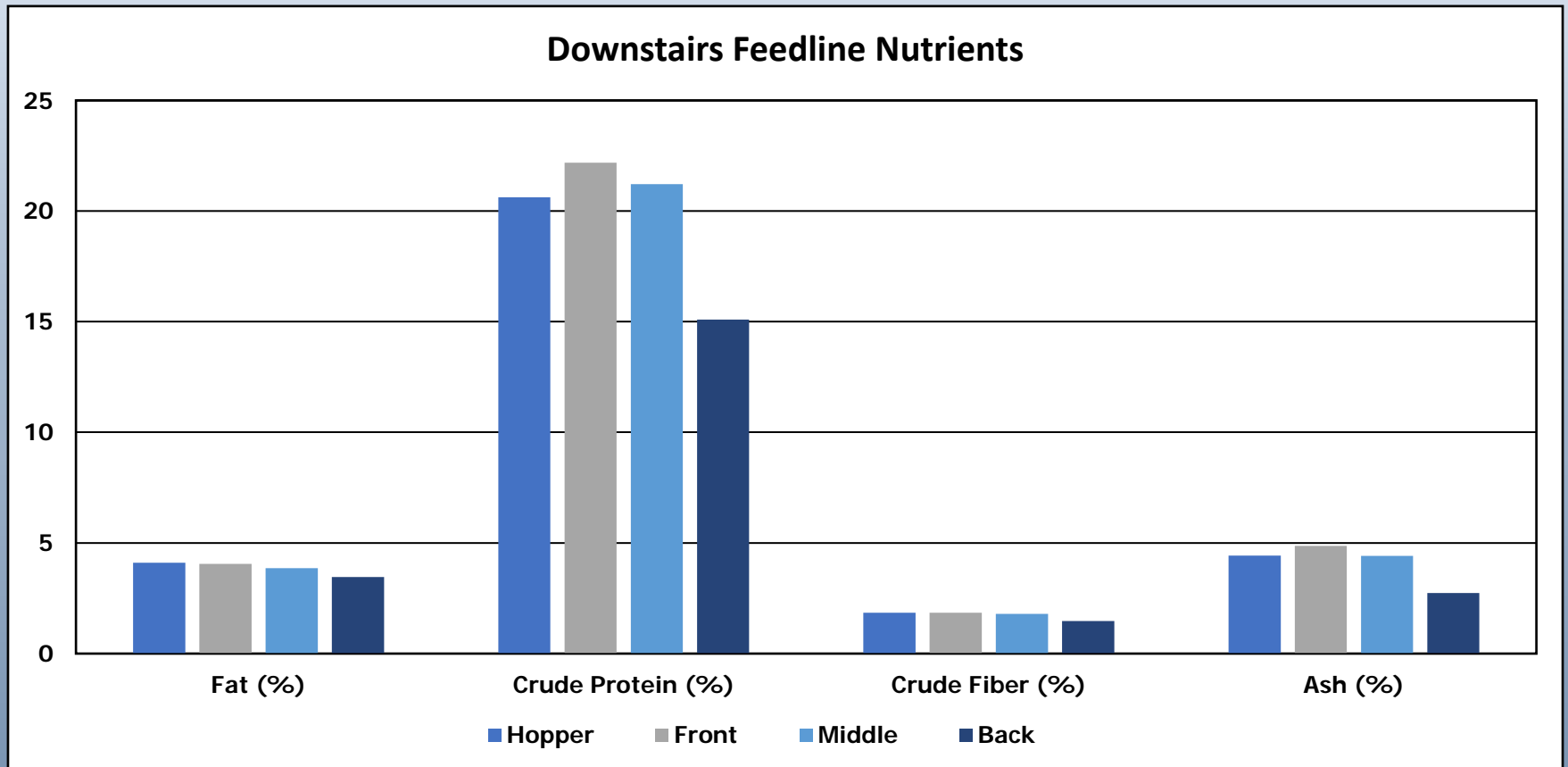
Things To Watch Out For

- Some feed labs report in Dry Matter – need to convert to As Fed
- Nutrient matrix for enzymes
- Feed separation (in the bag, bin or feedline)

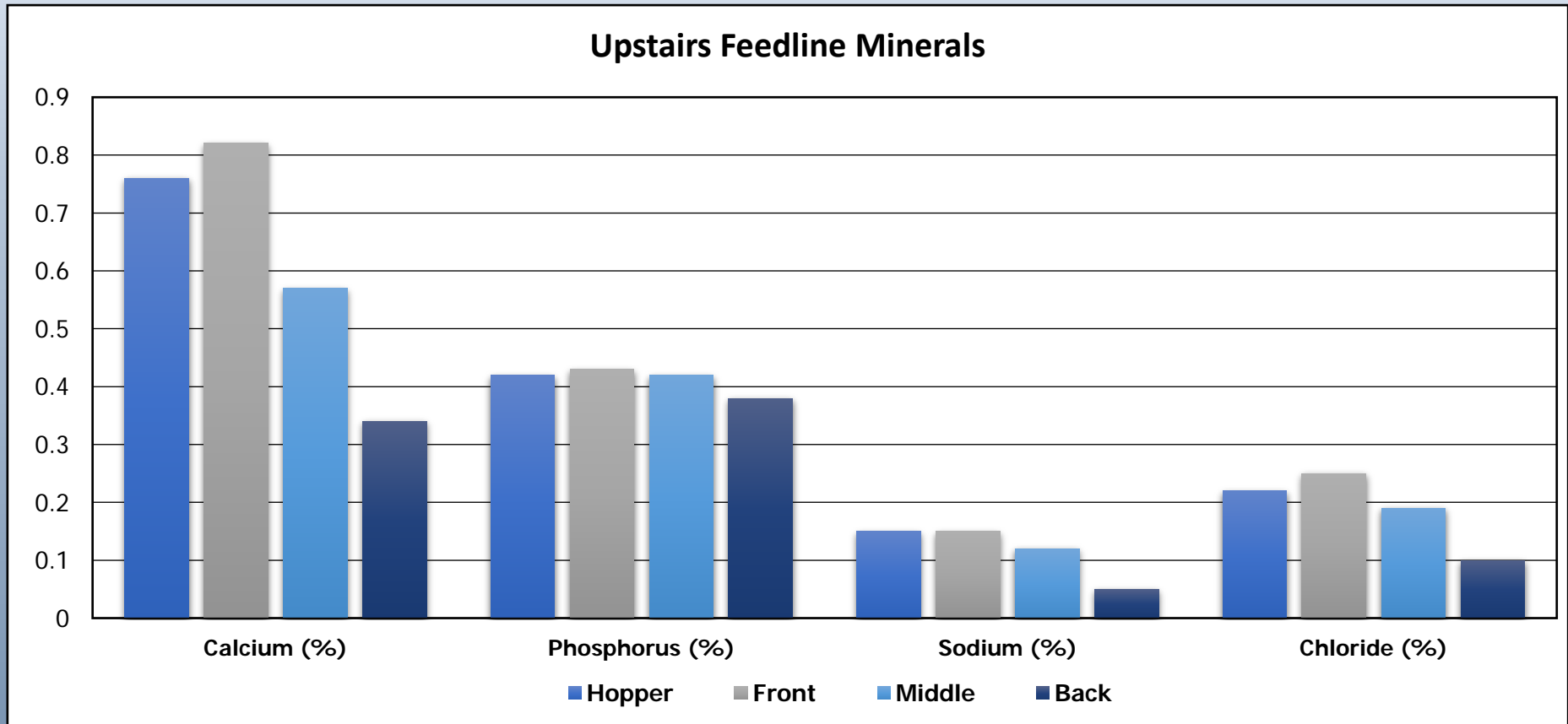
Examples of Feed Separation



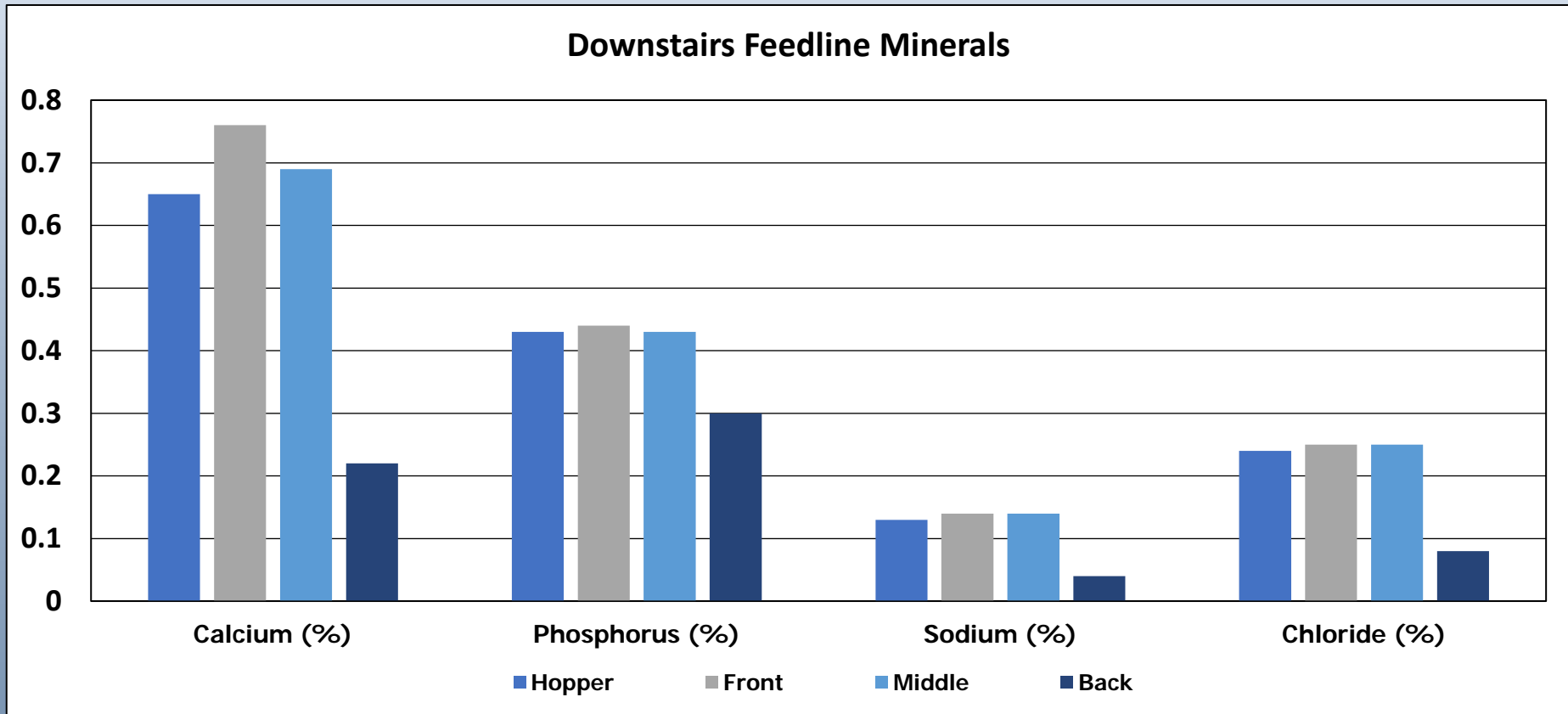
Examples of Feed Separation



Examples of Feed Separation



Examples of Feed Separation



Summary

- Feed test interpretation is straight forward with the right resources on hand
 1. Breed nutrition recommendations
 2. Formula
 3. Label
 4. Feeds Act (Schedule 1 – Table 1)
 5. Context (problem vs. routine monitoring)
- Remember to consider enzyme matrix values, dry matter and feed separation
 - ❖ Always take a sample(s) that the birds are eating if you suspect a problem – you can always throw it out!



Thank you!

and any Questions?

Shawn.Fairbairn@poultrypartners.ca

(306) 715-1155

www.poultrypartners.ca

