

# FEED MAIZE Nutrition



John McKay
ECTOL Plant and Crop Nutrients

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#### Maize Demonstration Trials NSW and N.Z.

For 16 years ECTOL Plant and Crop Nutrients has been working with farmers, graziers and horticulturalist throughout Australia and New Zealand developing sustainable crop nutrients, optimising production, plant health and soil health, while increasing net revenues to farmers.

The Company's programs and substantial trials cover cereal crops, fodder crops, pasture, potatoes and other field vegetables and a wide range of high value horticulture crops from tree fruits to vines to melons.

#### The following products are recommended for corn or maize silage:

A well-established bio-nutrient containing growth promotants from marine algae, plus amino acids, complex sugars, organic acids, potassium and trace elements, which provide stress protection and increased photosynthetic efficiency (University of Tasmania), improved yields and plant health.

A mixture of protected Phosphorus, Nitrogen and Potassium that is safely applied in-furrow. It will not "burn" sensitive seeds or seedlings. The Phosphorus complex avoids immobilisation and lock-up of Phosphorus in acid soils and Calcareous soils (high buffering index) and reduces the loss from Phosphorus run-off in low buffering soils. The Nitrogen complex, avoids the atmospheric and leaching loss of Nitrogen and the acidification of soils. Ectol Starter is an efficient alternative to DAP use in broad-acre crops and where higher phosphorus applications are required.



A highly efficient form of slow release Nitrogen, reducing the incident of Nitrogen loss, and eliminating the incidence of foliar damage or equipment damage.



## Maize/Corn

Since 2014 a program has been developed in the Riverina region of NSW, Australia, an important region for the production of irrigated corn and maize silage. In recent years, growers have been challenged by the increasing cost of water and fertilisers.

Over 3 years, field trials on maize silage are demonstrating the Ectol/NitrotainTE program is highly effective and improves a conventional fertiliser program and importantly is saving the growers money without any loss of yield or quality.

#### **Trial Results:**

	Comparative Fertiliser Costs Silage Maize									
	Australia						New Zealand			
	Dry Fert \$Aust		Ectol/NTE				Dry Fert \$NZ	Ectol/NTE		
		\$/Ha			\$/Ha					\$/Ha
Base Fert			DAP	175Kgs/Ha	112		330	Fert 12.10.10	150Kg/Ha	165
Starter Fert DAP	250Kg/Ha	170	Ectol	20L/Ha	130		185	Ectol	20L/Ha	130
Nitrogen Urea	500Kg/Ha	320	Starter	20L/Ha	86		155	Starter	20L/Ha	90
			NitrotainTE	20L/Ha	86			NitrotainTE	20L/Ha	100
Total Fert \$/Ha		\$490			\$302		\$670			\$320
Irrigation	Australia Only									
	8 ML/Ha	\$35/M/L	\$280/Ha							

**Blighty NSW Australia:** An ongoing field trial is being conducted at the Andrews Family property at Blighty NSW and in the last two years a yields of 20tDM/Ha equaled and 26tDM/Ha exceeded area averages. In addition Metabolisable Energy (ME) at 11.4 was 4.6% above area averages and Digestibility of Dry Matter (DMD%) at 75.9 was also 4.6% above area averages. whilst it is early days, growers are confident that production and quality have been maintained with the Ectol/NitrotainTE program that does not involve any pre-plant fertiliser but does involve crop rotation with legumes. The total fertiliser cost in 2015/16 was only \$120/ha and production equaled regional averages.

**Waikato New Zealand**: A demonstration trial was undertaken at Eureka in the Waikato. The standard protocol is a preplant of 12.10.10 Nitrophoska, DAP in furrow and Urea post emergence. The Ectol trial reduced the pre-plant by half and applied the Ectol, NitrotainTE and Ectol Starter as 2 applications post-harvest.

Results: On both trial sites production has equaled or exceeded regional averages, quality as Metabolisable Energy has exceeded regional averages and the cost per unit of production is less.



Natural Plant Nutrients essential for healthy plant growth, frost and stress protection and disease resistance.

Recommendations: For foliar, soil, or fertigation applications in horticultural, agricultural, pasture and turf production.

### ANALYSIS

2-1-7

#### ANALYSIS:

Total Nitrogen 2%
Total Phosphorus 1%
Total Potassium 7%

#### **OTHER MINERALS**

Manganese	215mg/L
Zinc	140mg/L
Boron	150mg/L
Iron	85mg/L
Copper	70mg/L
Cobalt	28mg/L
Molybdenum	28mg/L
Selenium	3mg/L

## TECHNICAL:

- Safe to use with crop protection and other fertilser products (subject to jar test)
- pH 6.5 naturally buffered
- Safe on flowers and fruits
- Filtered to 100microns.
- Safe with animals or livestock (no withholding period)
- Contents may settle
- Store under cover

PROTECT &
GROW CONTAIN.

MACRO & MICRO
ELEMENTS

KELP EXTRACTS

AMINO ACIDS
SUGARS
HUMIC ACID
FULVIC ACID
NATURAL PLANT
ELICITORS

For more information: www.ectol.com

Manufactured in Australia by: Farmers Marketing Network Pty Ltd. PO Box 525 Drummoyne, NSW 2047 Australia. Tel 0438 918 135, info@fmn.com.au Distributed in New Zealand by: Farmers Marketing Network Pty Ltd. Duntroon Rd Kurow, Nth Otago Tel 0274 500625 NET CONTENTS 20L 200L 1000L



Foliar applied plant nutrition, a blend of kelp extracts, terrestrial plant extracts, natural amino acids, sugars, humates, fulvates and minerals that provide nutrients assisting plant stress resistance and healthy growth.

#### PLANT HEALTH AND PRODUCTION:

Ectol increases root growth, sugar production (photosynthesis) and helps plants resist pests and disease and increases production.

#### GENERAL INFORMATION:

Ectol can be applied to all photosynthesising plants and complements existing fertiliser programmes. Use foliar spray, fertigation or irrigation applications, as appropriate to the crop. Ectol may be incorporated into existing spray programmes but a jar test is recommended. The product is filtered to 100 microns

#### CROP RECOMMENDATIONS:

# Tree Crops: Apples, pears, stone fruit, cherries, citrus and nuts.

Frost protection: 7.5L/ha at each applications 10 to 14 days apart. Commence at early flowering.

General crop health: 2 L/ha with each cover spray

Heat stress protection (increase hydration) 2 to 5L /ha during heat event.

Cracking and Polling of Cherries: 2 applications of 5L/ha in the months prior to harvest, to strengthen cell walls, maintain green stems and reduce stem loss.

Apple Post Harvest Firmness: 4 applications of 5L/ha pre-harvest.

#### Grape Vines:

Frost protection: First leaf 3L/ha increasing to 6L/ha. Spray at 14 day intervals for the period of frost risk.

Heat protection, disease suppression, reduce saline stress from irrigation water and maintain plant health: 2L/ha with each cover spray, taken through to harvest.

Ectol will not cause excessive canopy growth or damage berries

#### Potatoes:

To increase tuber numbers; 2 apps at 3L/ha pre-initiation or apply in furrow with tubers at planting. To increase tuber size and uniformity, reduce pests and disease and delay "die-off": 4 apps of 5L/ha between initiation and harvest.

#### Pasture:

To increase metabolisable energy and disease suppression, apply 5L/ha after cutting or grazing, by boom spray or irrigator Ectol stimulates clover production in pasture.

#### Corn (Maize):

Apply 10 L/ha at planting or post emergence to increase root growth and 10L/ha during anthesis by spray or irrigation to increase feed quality of maize.

#### Wheat and Canola:

Apply 2-4L/ha to assist with frost protection, growth and plant health. Apply 2-4L/ha during run-up and anthesis or "milk" in wheat.

#### Lucerne and Clovers:

Apply 5L/ha after each cut or grazing to increase production and nodulation.

#### **Avocados and Mangoes:**

Frost protection 5L/ha every 10 to 14 days.

#### Pineapples:

Frost and heat stress apply 5L/ha every 3 weeks during periods of risk.

#### Vegetables and Field Fruits:

Apply 20L/ha as split applications by spray or fertigation, to increase root growth, plant health, fruit set and development.

#### Turf, Golf Greens and Gardens:

To assist with the suppression of pathogens, stimulate root growth and plant health, apply a 10% solution during periods of active growth.

#### **DILUTION RATES:**

Add to sufficient water to ensure cover of foliage.

**STORAGE:** Avoid direct sunlight. Contents may settle.



Liquid Nitrogen, Potassium and Trace Elements; nutrition, for foliar, soil or fertigation applications. Nitrotain TE retains nitrogen in the plant or within the soil, minimising atmospheric and leaching loss or the acidification of soils.

#### GENERAL INFORMATION

Nitrotain TE trace elements chelated (protected from becoming unavailable) with naturally occurring lighin compounds, maximising foliar and root absorption.

#### RECOMMENDATIONS

Nitrotain TE may be applied to citrus, stone fruit, apples, pears and all tree crops, cereal & arable crops, legumes, grasses, vegetables and gardens.

Seasonal Topdress: NitrotainTE will boost plant growth without causing excessive vegetative growth, leaf or fruit "burn". Ideal for dry or heat stress conditions, cold or water logged soils.

Fruit Sizing: NitrotainTE assists grains fill and improves fruit size and finish without softening.

Post Harvest: NitrotainTE will provide the ideal post harvest Nitrogen essential for future perennial crops.

#### CROP RECOMMENDATIONS

Tree Fruit Crops/Vines: Apply 10L/ha as required.

Post Harvest: A single application of 10Lha just before leaf fall.

Field Crops and Vegetables: Apply regularly at 5L/ha

Pasture, Legumes and Cereals: Apply 10L/ as required.

Dilution Rate: Dilute from 1:50 to 1:100 with water.

Compatibility: Will mix with crop protection products and liquid fertilisers; do not mix with oil based chemicals. Jar test before use. Highly compatible with Ectol (www.ectol.com)

Storage: Avoid direct sunlight; mix before using.

Handling: Non toxic, non flammable. Avoid contact with skin and eyes and avoid breathing spray mist.

#### ANALYSIS

•						_
ľ	Nitrogen (N) as Carboxyl-amide Complex		93 g	ĮΈ	9.3%	5
l	Nitrogen (N) as Ammonium Lignonitrate		25 g	/L	2.5%	6
ı	Nitrogen (N) as Potassium Lignonitrate		35 g	/L	3.5%	į.
ı	Nitrogen (N) as Ammonium Lignoureate		55 g	/L	5.5%	į.
ı	Potassium (K) as Potassium Lignosulphonate		40 g	/L	4.0%	5
ı	Sulphur (S) as Ammomium Lignosulphonate		15 g	/L	1.5%	į.
ı	Magnesium (Mg) as Magnesium Lignosulphonate		15 g	/L	1.5%	į.
ı	Manganese (Mn) as Manganese Lignosulphonate	750	mg/L	0.	075%	6
ı	Iron (Fe) as Iron Lignosulphonate	300	mg/L	0.0	030%	į.
ı	Boron (B) as Ammonium Lignoborate	520	mg/L	03(	052%	6
ı	Copper (Cu) as Copper Lignosulphonate	250	mg/L	0.0	025%	į.
ı	Zinc (Zn) as Zinc Lignosulphonate	250	mg/L	0.0	025%	6
ı	Molybdenum (Mo) as Ammonium Lignomolybdate	100	mg/L	0.	010%	į.
	Cobalt (Co) as Cobalt Lignosulphonate	120	mg/L	0.	012%	5
l	Selenium (Se) as Ammonium Lignoselenate	25	mg/L	0.0	002%	6

Manufactured in Australia by: Farmers Marketing Network Pty Ltd, PO Box 525 Drummoyne NSW 2047 Australia Tel: 0438 918 135 info@fmr.com.au

Distributed in New Zealand by: Ectel NZ Ltd, Duntroon Rid Kurow Nth Otago New Zealand Tel: 0274 500 625



www.ectol.com



# Liquid NPK Starter crop nutrient for direct incorporation with seed

General Information: Ectol Starter is a mixture of protected Phosphorus, Nitrogen and Potassium that is safely applied in-furrow. It will not "burn" sensitive seeds or seedlings. The Phosphorus complex avoids immobilisation and lock-up of Phosphorus in acid soils and reduces the loss on Nitrogen from leaching and Phosphorus as run-off.

**Recommendations:** For application to the soil providing immediate nutrients on germination, to emerging seedlings and ongoing nutrients to crops.

ANALYSIS		
14:12:2		
Total Nitrogen	14%	Humates
<b>Total Phosphorus</b>	12%	Fulvates
Total Potassium	2%	Lignosulphonates
Molybdenum	0.0005%	Kelp
Boron	0.025%	

Compatibility: can be mixed with crop protection and herbicide products subject to a jar test.

**Storage and Handling:** Store under cover and out of direct sunlight. Contents may settle so mix before using. Best used within 12 Months of purchase. Non toxic and non inflammable. Avoid contact with skin and eyes. Avoid breathing spray and mist.

CROP	RATE/DILUTION	NOTES
Cereal Crops, Legumes, Pulses, Maize	10L/ha to 50L/ha	As determined by the crop requirements. Best drilled in with seed.
Pasture	20L/ha	Spring and Autumn spray applications.
Potatoes	10L/ha to 50L/ha	Apply as crop planted.

#### MANUFACTURED BY

Farmers Marketing Network Pty Ltd, PO Box 525 Drummoyne, NSW 2047 Australia. Tel 0438 918 135. info@fmn.com.au



# Silage Maize Protocol -Liquid bio nutrients

Note

2016

This is a standard programme that will be modified depending on the particular soil conditions and the use or otherwise of pre-plant, furrow or follow-up fertiliser applications.

Product Ectol Protect and	Applic 1 (L/ha)	Applic 2 (L/ha)	Total Nutrient	Programme cost 1000L (\$Aus)	Programme cost 1000L (\$NZ)
Grow	10	10	20	130	130
NitrotainTE	10	10	20	86	100
Ectol Starter	10	10	20	78	90
				298	320
Product Cost to farmer (exc GST) Ectol NitrotainTE Ectol Starter		1000L shuttle (\$Aus) 6500 4300 4300		(\$NZ) 6500 5000 4500	
Application 1 Application 2	applied wit	na with water at o th seed or spraye ha with water pr	d after emer		e added to irrigation water,

Ectol will provide frost protection to emerging seedlings and will protect against

desiccation during flowering.

# **Waikato Trial**

Variety – P1253

Planting Rate 104,000 S/Ha

Preplant Fert 12.10.10

150 kg/ha

Ectol: 20L/ha

NitrotainTE: 20L/ha

Starter: 20L/ha

## MAIZE – WHOLE PLANT



R J Hill Laboratories Limited 1 Clyde Street

Private Bag 3205 Hamilton 3240, New Zealand

# ANALYSIS REPORT

AUSTRALIA

Page 1 of 5

shpv1

Client: Farmers Marketing Network Pty Ltd Lab No: 1553336

Address: PO Box 525
Drummoyne Date Reported: 29-Mar-2016

SYDNEY Quote No: Order No:

Submitted By: J McKay

Client Reference:

Sample Name: Maize Whole Plant (P1253)

Sample Type: Maize, Forage (P168)

Analysis

Level Found Medium Range Low Medium High

Sample Type: Ivialze, Forag	ge (P168)					
Analysis		Level Found	Medium Range	Low	Medium	High
Nitrogen*	%	1.0	1.0 - 1.4		<b>–</b>	
Nitrogen*	%DM	1.1				
Dry Matter*	%	44.7	25.0 - 39.0			
Crude Protein*	%DM	6.7	6.0 - 9.0			
Acid Detergent Fibre*	%DM	22.5	25.0 - 35.0			
Neutral Detergent Fibre*	%DM	38.3	35.0 - 50.0			
Ash*	%DM	3.1	5.0 - 10.0			
Organic Matter*	%DM	96.9				
Soluble Sugars*	%DM	2.5				
Starch*	%DM	35.9	15.0 - 40.0			
Crude Fat*	%DM	2.3				
Digestibility of Organic Matter in D (DOMD)*	ry Matter %	67.3	60.0 - 70.0			
Metabolisable Energy*	MJ/kgDM	10.8	9.5 - 11.0			
Non Structural Carbohydrate*	%DM	49.5				
OMD in-vivo*	%DM	69.5				

The above nutrient graph compares the levels found with reference interpretation levels. NOTE: It is important that the correct sample type be assigned, and that the recommended sampling procedure has been followed. R J Hill Laboratories Limited does not accept any responsibility for the resulting use of this information. IANZ Accreditation does not apply to comments and interpretations, i.e. the 'Range Levels' and subsequent graphs.



R J Hill Laboratories Limited 1 Clyde Street Private Bag 3205 Hamilton 3240, New Zealand

Lab Number: 1553336.2

## ANALYSIS REPORT

Page 2 of 5

shpv1

Client: Farmers Marketing Network Pty Ltd

Address: PO Box 525

Drummoyne SYDNEY NSW 2047 AUSTRALIA 

 Lab No:
 1553336

 Date Registered:
 17-Mar-2016

 Date Reported:
 29-Mar-2016

Quote No: Order No:

Client Reference:

Submitted By: J McKay

Sample Name: Maize Stover Only (P1253) Sample Type: Maize, Stover Only (P169)

Analysis		Level Found	Medium Range	Low	Medium	High
,						
Nitrogen	%	1.0				
Nitrogen*	%DM	1.1				
Dry Matter*	%	32.2				
Dry Matter	,,,	02.2				
Crude Protein*	%DM	6.8				
Acid Detergent Fibre*	%DM	41.1				
Neutral Detergent Fibre*	%DM	61.3				
Ash*	%DM	10.0				
Organic Matter*	%DM	90.0				
Soluble Sugars*	%DM	7.2				
Starch*	%DM	0.5				
Crude Fat*	%DM	1.2				
Digestibility of Organic Matter in D (DOMD)*	ry Matter %	39.9				
Metabolisable Energy*	MJ/kgDM	6.4				
Non Structural Carbohydrate*	%DM	20.7				
OMD in-vivo*	%DM	44.3				

The above nutrient graph compares the levels found with reference interpretation levels. NOTE: It is important that the correct sample type be assigned, and that the recommended sampling procedure has been followed. R J Hill Laboratories Limited does not accept any responsibility for the resulting use of this information. IANZ Accreditation does not apply to comments and interpretations, i.e. the 'Range Levels' and subsequent graphs.

## **MAIZE - COB ONLY**



R J Hill Laboratories Limited 1 Clyde Street Private Bag 3205 Hamilton 3240, New Zealand

# ANALYSIS REPORT

Page 3 of 5

shpv1

Client: Farmers Marketing Network Pty Ltd Lab No: 1553336

Address: PO Box 525
Drummoyne Date Registered: 29-Mar-2016
SYDNEY Quote No:

Order No:

Client Reference:

Submitted By: J McKay

Sample Name: Maize Cob Only (P1253)

Lab Number: 1553336.3

Sample Type: Maize, Cob Only (P369)

NSW 2047

**AUSTRALIA** 

Campio Typo: Maizo, cos c	, (					
Analysis		Level Found	Medium Range	Low	Medium	High
Nitrogen*	%	4.8				
Nitrogen*	%DM	5.0				
Dry Matter*	%	63.6				
Crude Protein*	%DM	31.3				
Acid Detergent Fibre*	%DM	9.2				
Neutral Detergent Fibre*	%DM	14.0				
Ash*	%DM	1.4				
Organic Matter*	%DM	98.6				
Soluble Sugars*	%DM	10.5				
Starch*	%DM	15.5				
Crude Fat*	%DM	3.9				
Digestibility of Organic Matter in Dr (DOMD)*	y Matter %	89.8				
Metabolisable Energy*	MJ/kgDM	14.4				
Non Structural Carbohydrate*	%DM	49.4				
OMD in-vivo*	%DM	91.1				

The above nutrient graph compares the levels found with reference interpretation levels. NOTE: It is important that the correct sample type be assigned, and that the recommended sampling procedure has been followed. R J Hill Laboratories Limited does not accept any responsibility for the resulting use of this information. IANZ Accreditation does not apply to comments and interpretations, i.e. the 'Range Levels' and subsequent graphs.

# **WAIKATO DEMONSTRATION TRIAL 2016**

From Hill Laboratories

Thu Mar 31 13:17:28 2016

Page 4 of 7



R J Hill Laboratories Limited 1 Clyde Street

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## REPORT

Page 4 of 7

street

McFarlane Contracting Client: PO Box 11054 Address:

Phone:

Hillcrest Hamilton 3251

07 824 1186

Lab No: Date Registered: Date Reported:

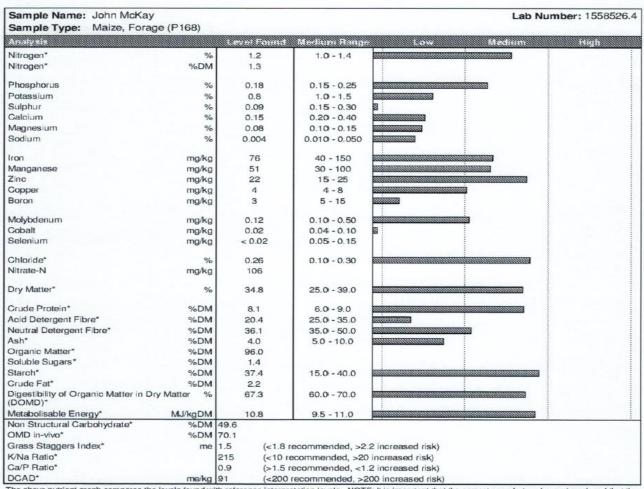
Quote No: Order No: Client Reference:

Submitted By:

29-Mar-2016 31-Mar-2016

1558526

McFarlane Contracting



The above nutrient graph compares the levels found with reference interpretation levels. NOTE: It is important that the correct sample type be assigned, and that the recommended sampling procedure has been followed. R J Hill Laboratories Limited does not accept any responsibility for the resulting use of this information. IANZ Accreditation does not apply to comments and interpretations, i.e. the 'Range Levels' and subsequent graphs.

Lab No: 1558526 v 1 Hill Laboratories Page 4 of 7

# **WAIKATO STANDARD**



R J Hill Laboratories Limited 1 Clyde Street Private Bag 3205

Hamilton 3240, New Zealand

Tel +64 7 858 2000 +64 7 858 2001 Fax Email mail@hill-labs.co.nz www.hill-labs.co.nz Web

#### NALYSIS REPORT

Page 1 of 4

shpv1

NZ Seed Houses Limited Client:

PO Box 1282 Address:

Phone:

Hastings 4156

0800 171 825

Lab No: Date Registered:

Date Reported:

Quote No: Order No:

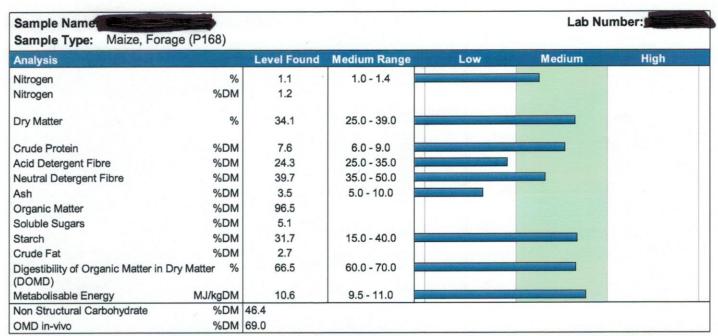
Client Reference:

Submitted By:

James Creswell

04-Apr-2016

05-Apr-2016



The above nutrient graph compares the levels found with reference interpretation levels. NOTE: It is important that the correct sample type be assigned, and that the recommended sampling procedure has been followed. R J Hill Laboratories Limited does not accept any responsibility for the resulting use of this information. IANZ Accreditation does not apply to comments and interpretations, i.e. the 'Range Levels' and subsequent graphs.

# JP, JD & JB Andrews, Blighty, NSW

TE	EU ANALYSIS KEPUKI	
JP, JD & JB Andrews "Avenel"	ATTENTION FAX NUMBER	Jarrod Andrews 03 5882 6317
Upper Tocumwal Rd Finley NSW 2713	PURCHASE ORDER PROJECT NUMBER	Cheque#301729 J1504-0473

DATE RECEIVED 15 April 2015 OUR SAMPLE NUMBER \$2015-10485

YOUR REFERENCE Com

SAMPLE TYPE Maize Silage

DESCRIPTION

DATE SAMPLE COLLECTED 13 April 2015

TEST	Result
NIR Package (NA)	
Dry Matter (%)	35.9
Moisture (%)	64.1
Crude Protein (% of dry matter)	7.1
Acid Detergent Fibre (% of dry matter)	20.9
Neutral Detergent Fibre (% of dry matter)	40.6
Digestibility (DMD) (% of dry matter) Day MATTER 1216 ESTIBILITY	75.9
Digestibility (DOMD) (Calculated) (% of dry matter) D. ORCANIC MATTER D	71.1
Est. Metabolisable Energy (Calculated) (MJ/kg DM)	11.4
Fat (% of dry matter)	3.4
Ash (% of dry matter)	5.3
Starch (% of dry matter)	28.8
Sugars (% of dry matter)	2.8

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Final Report

Report Number: 132288

Comments:

Metabolisable Energy has been calculated using the following equation:

ME = 0.16 x DOMD%

Please note: Dry Matter (DM%), Crude Protein (CP%) and Digestibility (DMD%) have been corrected in accordance with AFIA approved methods.

Joanne Warnes

Analyst, Quality & Milling Laboratory

20 April 2015

Report Number: 132288 Issued: 20 Apr 2015