ADVISORY COMMITTEE ON ANIMAL FEEDINGSTUFFS

67th Meeting of ACAF on 19 June 2015

Presentation Paper:
Food Fortress Protecting the Foodchain

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Northern Ireland Grain Trade Association
June 2015

FOOD FORTRESS

Protecting the Food Chain

Presentation to ACAF
19th June - QUB

Northern Ireland
Grain Trade Association

Industry Food Assurance Group
(IFAG)

Chaired by **Professor Pat Wall (Former EFSA Chair)**

The Risk:

- A contamination resulting in an export ban on N. Ireland milk, meat or eggs.
  - Devastating to our customers
  - And devastating to feed trade as our market crashes
  - Devastating to the Northern Ireland economy – (Agriculture is our biggest PS employer & export earner)

- The Challenge

  Develop a strategy robust enough to protect the food chain.

  Effective and affordable - complementing existing schemes.

Institute for Global Food Security

Formerly Institute of Agri-food and Land Use @ QUB

Director: Professor Chris Elliott

Professor of Food Safety

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Role of QUB IGFS

*Develop feed risk register

*Feed Industry survey/gap analysis

*Develop & Pilot new sampling regime

*Support and review ongoing operation

ASSET

Assured, Safe, and Traceable

Queen's University Belfast

Strategic Testing Program

- Throughout the year
- Across contaminants
- Focused on production rations
- According to risk
- Based on composite samples

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TESTING PROGRAM

No. of Tests/Species/annum

Tonnes Produced	150 K +	<150 K	<100 K	<50 K	<10 K
Dioxin	4	3	3	2	1
Heavy Metals	12	6	4	2	1
Mycotoxins	4	4	3	2	2
Pesticides	1	1	1	1	1
Annual Fee	**£1,850**	**£1,560**	**£1,200**	**£860**	**£580**

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Scheme Operation

Compounder Package:

- Participants issued with sampling program.
- Samples assembled and composites made up.
- Forwarded to selected labs for testing.
- Results disseminated – certificate of each test.
- Results shared & protocols agreed with regulators
- Member supported in event of breach.
- QUB support - annual report/risk reruns.

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Pilot Scheme
Compound Feeds

To prove and refine the detail/operation

6 months October – March 2014

18 feed mills participating

1.2 Million tonnes covered (90% of trade)

Outcome highly successful !

SAMPLES TESTED

- **145 Heavy Metals** – Including Arsenic, Lead, Cadmium and mercury.

- **119 Mycotoxins** - Sweep for Aflatoxin B1, B2, G1, G2, Ochratoxin, Zearlenone, Vomitoxin, T_2 Toxin.

- **51 Pesticides** - Covering 106 active ingredients

- **102 Dioxin** – Dioxins & Furans, Dioxin -like PCB's

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Date of Issue: 10/04/2015
Test Report Ref: 3150171
Sample Month: Mar-15

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CERTIFICATE OF ANALYSIS

Sample Ref: 31501647
Composite Size: 5

Sample Type: Ruminant Composite
Testing Lab: CAMPDEN

	Result (mg/kg)	Internal Limit (mg/kg)	Legal Limit (mg/kg)
Arsenic	0.093	0.80	4
Cadmium	0.050	0.10	0.5
Lead	0.109	2.00	10
Mercury	0.001	0.04	0.2

Caroline Hanna

Caroline Hanna (Quality/Laboratory Manager)

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BERS

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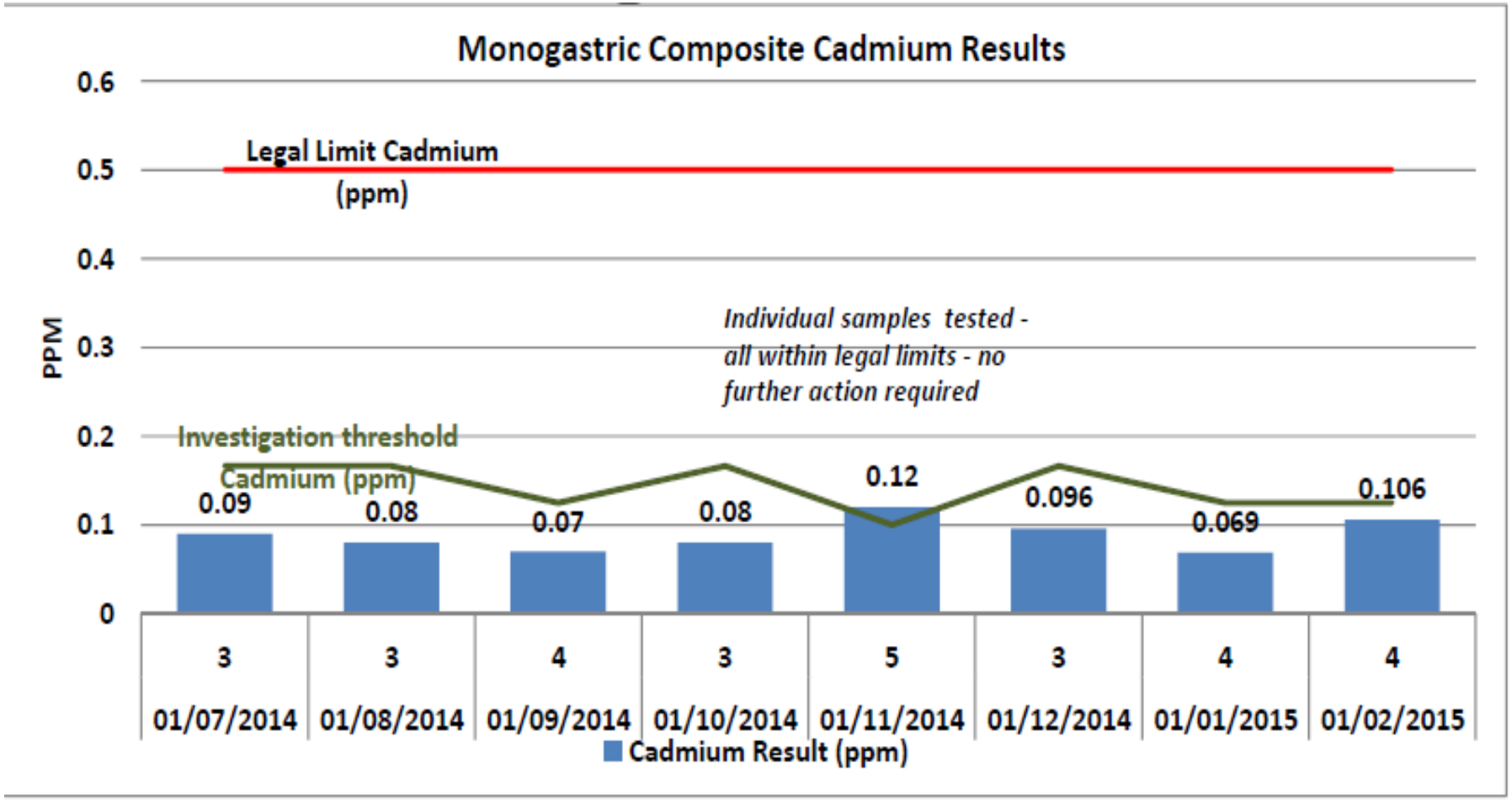
Protecting the food chain

Charts into 2015 Monogastric New!
Download
View
Food Fortress Results July-Sept 2014
Download
View

FOOD FORTRESS
MEMBER LOGIN
Username
Password

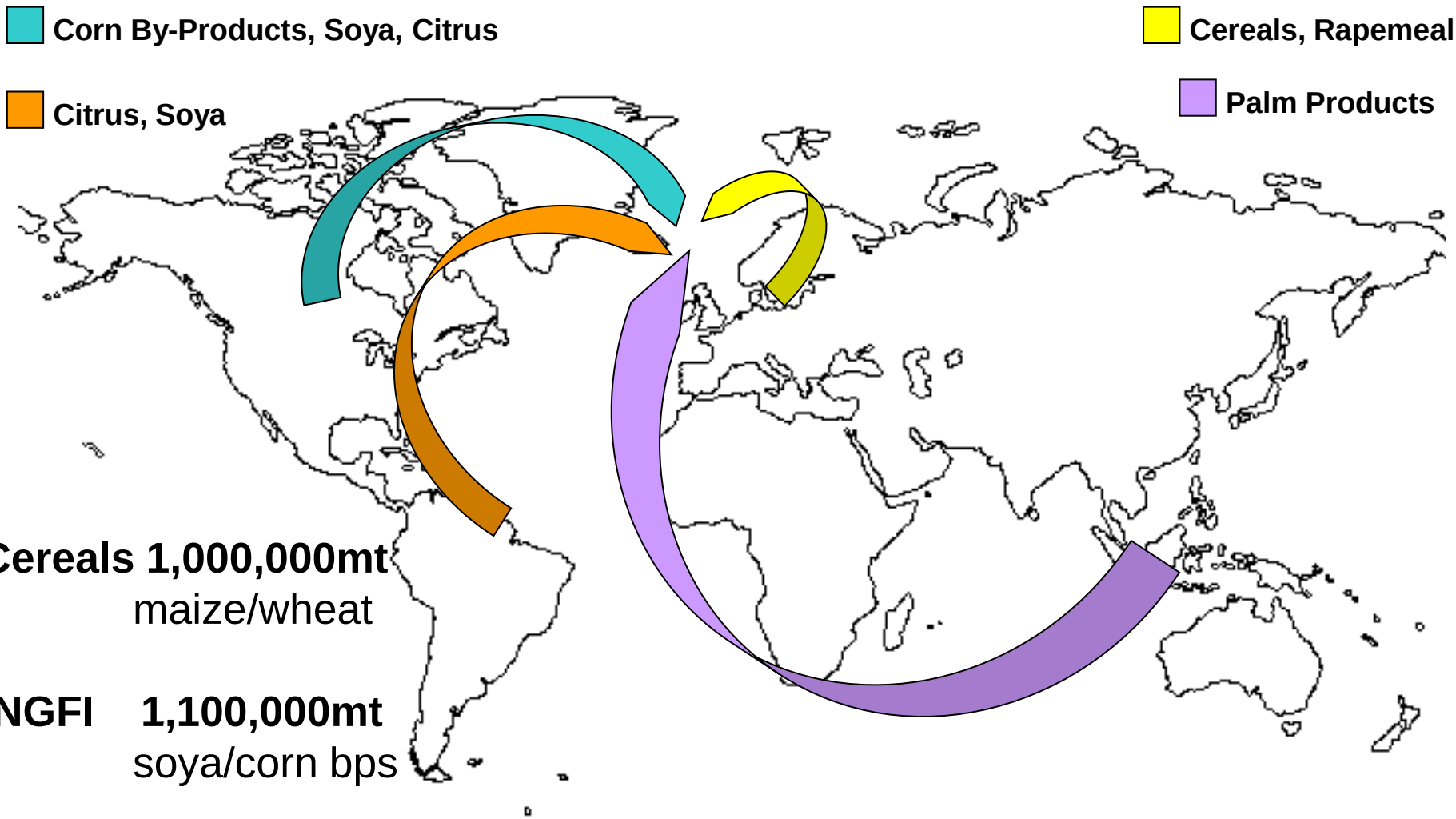
List of Members


Monogastric Composite Cadmium Results
0.6
0.5
0.4
0.3
0.2
0.1
0
PPM
Legal Limit Cadmium (ppm)
Individual samples tested - all within legal limits - no further action required
Investigation threshold Cadmium (ppm)
0.09
0.08
0.07
0.08
0.12
0.096
0.069
0.106
3
3
4
3
5
3
4
4
01/07/2014
01/08/2014
01/09/2014
01/10/2014
01/11/2014
01/12/2014
01/01/2015
01/02/2015
Cadmium Result (ppm)

Month	Feed Type	Composite Size	Dioxins & Furans Results Upper Bound WHO2005 Toxic Equivalents ng/kg	Sum of Dioxin & PCB results
Jul-14	Ruminant	3	0.0360	0.2600
Aug-14	Ruminant	4	0.1500	0.2100
Aug-14	Monogastric	4	0.1500	0.2200
Sep-14	Ruminant	4	0.1000	0.1700
Sep-14	Ruminant	4	0.1100	0.1700
Sep-14	Monogastric	4	0.1100	0.1700
Oct-14	Ruminant	4	0.1000	0.1600
Nov-14	Ruminant	4	**0.2200**	0.2700
Nov-14	Monogastric	4	0.0970	0.1500
Dec-14	Ruminant	4	0.1200	0.1700
Dec-14	Ruminant	4	0.1200	0.1700
Jan-15	Ruminant	4	0.1300	0.1800
Feb-15	Ruminant	4	0.1300	0.1900
Feb-15	Monogastric	3	0.1300	0.1800

Month	Composite Size	Feed Type	Aflatoxin B1 Result µg/kg	DON Result µg/kg	Ochratoxin Result µg/kg	Zearalenone Result µg/kg
Jul-14	4	Ruminant	0.2000	289.6	0.30	51
Aug-14	5	Ruminant	0.2000	50.0	2.30	58
Sep-14	6	Ruminant	0.2000	50.0	0.20	73.2
Sep-14	2	Poultry	0.2000	50.0	0.20	26.8
Oct-14	6	Ruminant	0.2000	329.2	0.40	39.4
Nov-14	8	Ruminant	0.2000	75.7	0.60	48.3
Nov-14	5	Poultry	0.2000	77.6	0.60	10.7
Dec-14	3	Pig	0.2000	50.0	0.20	10
Dec-14	9	Ruminant	0.2000	50.0	0.20	10
Jan-15	8	Ruminant	0.2000	339.0	1.40	**128**
Feb-15	7	Ruminant	0.5000	192.5	0.50	53.5
Feb-15	5	Poultry	0.2000	228.0	0.30	25.7
Feb-15	2	Pig	0.5000	50.0	2.80	10

Importers Program



Cereals 1,000,000mt
maize/wheat

NGFI 1,100,000mt
soya/corn bps

Importers Program

- Early detection of problems
- Importers issued with sampling program for each commodity.
- Sampling frequency according to risk
- Compositing samples to detect hot spots
- Test results submitted to scheme.

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RISK PROFILE

RISK PROFILE	HEAVY METALS	MYCOTOXINS	PESTICIDES	DIOXINS
BARLEY	1	3	1	1
MAIZE	1	10	7	1
WHEAT	1	10	1	1
CORN GLUTEN	3	10	1	3
WHEATFEED	3	3	1	1
HYPRO SOYAMEAL	3	1	5	7
RAPEMEAL	3	1	1	7
CANOLA	3	1	1	1
US DISTILLERS	1	10	1	1
CORN DISTILLERS	1	10	1	1
WHEAT DISTILLERS	1	1	1	1
SUGARBEET	3	1	1	10
SOYABEANS	1	1	7	10
SUNFLOWER	3	7	1	3
CITRUS	3	1	1	3
PALM KERNEL	10	5	1	1
WHEAT GLUTEN	1	1	1	1
SOYA HULLS	3	1	7	10
UK OILSEED RAPE	3	1	1	7
NGM SOYAMEAL	1	1	7	10

Importers testing plan

- Risk analysis on material/contaminant
- % age inclusion of material in finished feed determines –

1. Sampling Frequency per 100k tonnes
2. Composite size

	All Data
Eurofins Determination Limit (ng TEQ/kg)	95% Confidence Limit, ng TEQ/kg
0.08-0.9	0.161

- Example - Dioxin testing of Pollard

Raw Materials Group 6 (Inclusion Rate ≤ 10%)					Wheat Feed (Pollard)										
	Legal Limit (ng TEQ/kg)	Inclusion Rate	RM Target for Finished Feed	No. of Composites	2	3	4	5	6	7	8	9	10	11	12
Dioxins	0.75	60%	1.250	Guideline Action Limits	0.625	0.417	0.313	0.250	0.208	0.179	0.156	0.139	0.125	0.114	0.104

	TESTING INTERVALS (Per "X" Tonnes)			
Commodity	**Heavy Metals**	**Mycotoxins**	**Pesticides**	**Dioxins**
Barley	176,500	93,500	247,500	302,500
Maize	176,500	28,500	35,500	302,500
Wheat	176,500	28,500	247,500	302,500
Corn Gluten	58,500	28,500	247,500	100,500
Wheat Feed	58,500	93,500	247,500	302,500
Soya Meal	58,500	281,500	49,500	43,500
Rape Meal	58,500	281,500	247,500	43,500
Corn Distillers	176,500	28,000	247,500	302,500
Wheat Distillers	176,500	281,500	247,500	302,500
Sugarbeet	58,500	281,500	247,500	30,500
Soya beans	176,500	281,500	35,500	30,500
Sunflower	58,500	40,500	247,500	100,500
Citrus	58,500	281,500	247,500	100,500
Palm Kernel	17,500	56,500	247,500	303,000
Wheat Gluten	176,500	281,500	247,500	302,500
Soya Hulls	58,500	281,500	35,500	30,500
Whole Rape	58,500	281,500	247,500	43,500
NGM Soya meal	176,500	281,500	35,500	30,500

Scheme Update

- First 12 month program ends - 30th June 15
- Now covering 47 mills & 99% of production
- Protocols agreed with regulators
- Start importers Scheme - 1st July 15
- Interest from outside N. Ireland

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Working with Regulators

- *Regular communication with DARD/FSA at every stage of the development*
- *Fully Supportive at all levels (up to Minister)*
- *Information shared & recognition earned*
- *FF results will inform DARD risk assessments and will influence official testing from 2016*
- *Agreed working arrangements in the event of a contamination event*

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The Food Fortress is working and has been enthusiastically received by the food industry.

* **Broiler sector fully engaged** –

- **Red meat sector fully committed** –
Incorporated into FQAS Beef & Lamb Scheme
11,000 farms (incl. 1,800 milk producers)

- **Dairy sector using FF as USP for NI milk products**

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