

## BEMEFA - Sector based monitoring plan – Results 2015



18/05/2016

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- Global monitoring plan
- Planning
- Realised vs planned analyses

#### Results 2015

- Level 1
- Level 2
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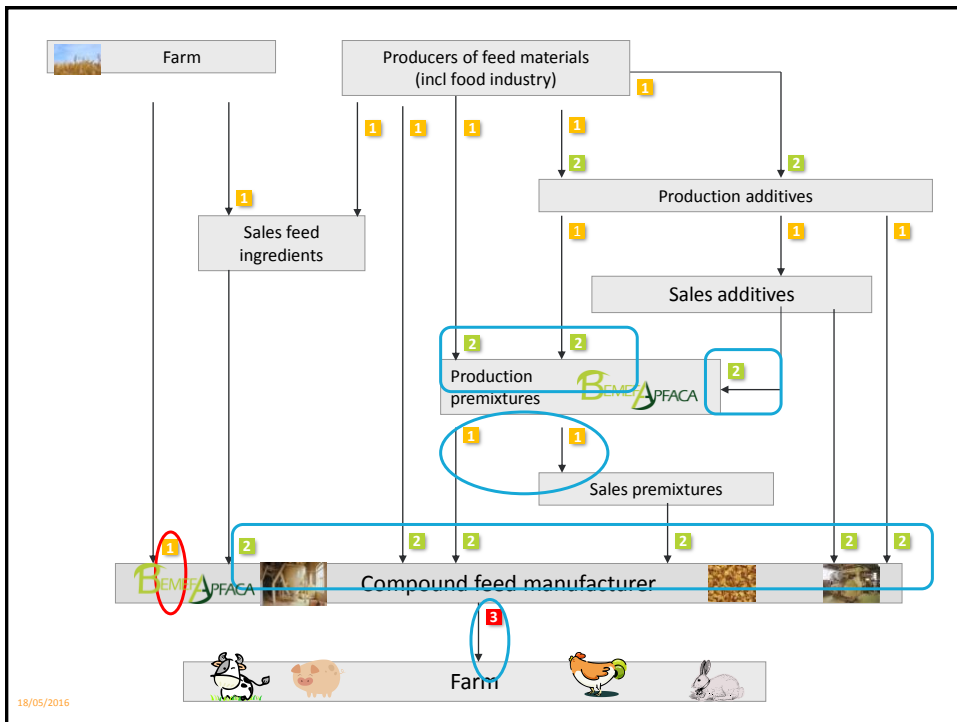
## Introduction

- Global monitoring plan
- Planning
- Realised vs planned analyses



## Monitoring plan 2015 – OVERVIEW DIFFERENT LEVELS

- **LEVEL 1:** Premixtures production **1**
- **LEVEL 2:** Purchase – certified source **2**
  - Additives (A)
  - Feed materials (FM)
  - Premixtures (PreM)
  - Mineral feed (purchase)
- **LEVEL 3:** Compound feed production **3**
  - Compound feed production (CF)
  - Mineral feed production



## Monitoring plan 2015 – GLOBAL OVERVIEW

- **261** participants = establishment units  
*cf. Plan 2014: 269 participants*
- **2122** analyses planned at the start of the Plan
- **2136** analyses realised → **101%**  
*cf. Plan 2014: 100%*
  - **37** analyses initially planned, have not been realised = **only 1,7% !**  
→ **VERY GOOD PERFORMANCE !**
  - **51** analyses additionally planned during the year

## Monitoring plan 2015 – GLOBAL OVERVIEW

- **2136 realised analyses**



~ > **147.000 results**

if the parameters, belonging to 1 analysis, have been counted individually:

- ✓ pesticides: 488 parameters
- ✓ mycotoxins: 11 parameters
- ✓ heavy metals: 4 or 5 parameters
- ✓ antibiotics residues: 12 parameters
- ✓ dioxins and dioxinlike PCBs: 3 parameters

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## MONITORING PLAN 2015 – GLOBAL OVERVIEW

(incl extra monitoring, analyses op advies WG HACCP, plan China)

	Premixes	TOTAL LEVEL 1	Additives	Feed materials	Premixes	Mineral feed (purchase)	TOTAL LEVEL 2	Compound feed	Mineral feed (production)	TOTAL LEVEL 3	TOTAL
4 heavy metals (As, Cd, Hg, Pb)	59	59	36	53	15	8	112		143	143	314
5 heavy metals (As, Cd, Hg, Pb, F)				33			33				33
Ambrosia				21			21				21
Antibiotics				23			23				23
Hydrocyanic acid				52			52				52
Chloramphenicol			11				11				11
Dioxins and dioxinlike PCBs (other matrices) - day + 3			69	74	15	8	166				166
Dioxins and dioxinlike PCBs (fats & oils) - day + 2				33			33				33
Enterobacteriaceae				5			5				5
OGM			12				12				12
Melamine			16	27			43				43
Ergot				22			22				22
Mycotoxins (incl. aflatoxin B1)				371			371	149		149	520
Aflatoxin B1				59			59				59
Insoluble impurities				12			12				12
PAHs				76			76				76
PCB - animal fat				24			24				24
PCB 24h - other matrices			26	36	15	8	85				85
Pesticides			22	268			290				290
Paraquat				10			10				10
Glyphosate											
Salmonella				125			125	149		149	274
Fungi				37			37				37
<b>TOTAL</b>	<b>59</b>	<b>59</b>	<b>192</b>	<b>1361</b>	<b>45</b>	<b>24</b>	<b>1622</b>	<b>298</b>	<b>143</b>	<b>441</b>	<b>2122</b>
	LEVEL 1		LEVEL 2				LEVEL 3				

## OVERVIEW MONITORING PLAN 2015 – REALISED ANALYSES

BEMEFA 2015	# analyses planned				# analyses realised			
	LEVEL 1	LEVEL 2	LEVEL 3	TOTAL	LEVEL 1	LEVEL 2	LEVEL 3	TOTAL
4 heavy metals (As, Cd, Hg, Pb)	59	112	143	314	59	112	145	316
5 heavy metals (As, Cd, Hg, Pb, F)		33		33		34		34
Ambrosia		21		21		21		21
Antibiotics		23		23		23		23
Hydrocyanic acid		52		52		52		52
Chloramphenicol		11		11		11		11
Dioxins and dioxinlike PCBs (other matrices) - day + 3		166		166		162		162
Dioxins and dioxinlike PCBs (fats & oils) - day + 2		33		33		33		33
Enterobacteriaceae		5		5		5		5
OGM		12		12		11		11
Melamine		43		43		42		42
Ergot		22		22		22		22
Mycotoxins (incl. aflatoxin B1)		371	149	520		359	149	508
Aflatoxin B1		59		59		59		59
Insoluble impurities		12		12		12		12
PAHs		76		76		75		75
PCB - animal fat		24		24		24		24
PCB 24h - other matrices		85		85		85		85
Pesticides		290		290		284		284
Paraquat		10		10		8		8
Glyphosate		0		0		11		11
Salmonella		125	149	274		131	170	301
Fungi		37		37		37		37
<b>TOTAL</b>	<b>59</b>	<b>1622</b>	<b>441</b>	<b>2122</b>	<b>59</b>	<b>1613</b>	<b>464</b>	<b>2136</b>

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### Results

- Level 1
- Level 2
- Level 3



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## Results

- Level 1
- Level 2
- Level 3

Productie voormengsels	
1	1

## LEVEL 1

## OVERVIEW

- Heavy metals

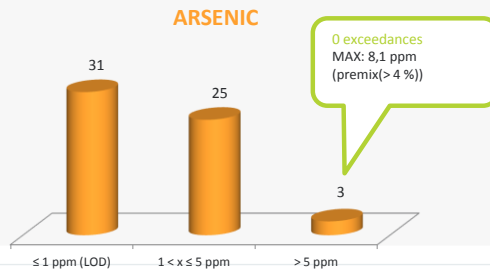
**LEVEL 1**

**Heavy metals**

Planned: 59 → Realised: **59**

• **ARSENIC**

⚖ Directive 2002/32  
 No standard for premixtures  
 Standard complete feed: 2 ppm (+ exceptions)

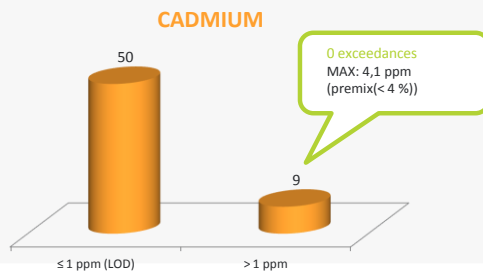


**LEVEL 1**

**Heavy metals**

• **CADMIUM**

⚖ Directive 2002/32  
 Standard premixtures: 15 ppm



**LEVEL 1**

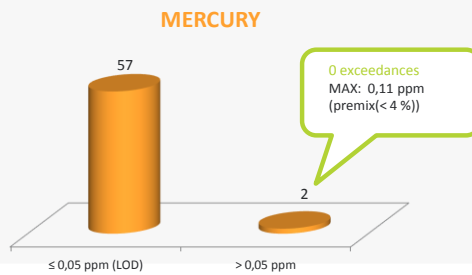
**Heavy metals**

• **MERCURY**

Directive 2002/32

No standard for premixtures

Standard compound feed: 0,1 ppm (+ exceptions)



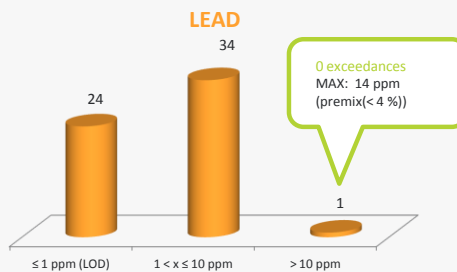
**LEVEL 1**

**Heavy metals**

• **LEAD**

Directive 2002/32

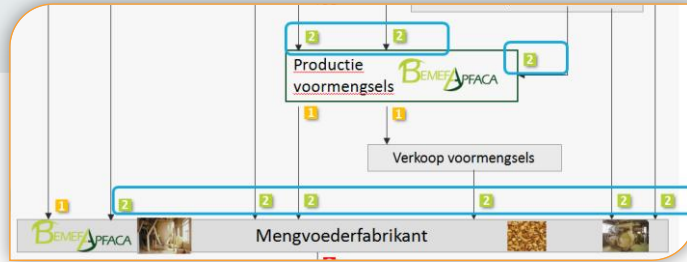
Standard premixtures: 200 ppm





## Results

- Level 1
- Level 2
- Level 3



## LEVEL 2

## OVERVIEW

- **Additives** – purchase
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
  - Melamine
  - Pesticides
- **Feed materials** – purchase
  - all parameters
- **Premixtures** – purchase
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
- **Mineral feed** – purchase
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs



## LEVEL 2

## OVERVIEW

- **Additives** – purchase
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
  - Melamine
  - Pesticides
- **Feed materials** – purchase
  - all parameters
- **Premixtures** – purchase
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
- **Mineral feed** – purchase
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs



## LEVEL 2

## Heavy metals

### FEED MATERIALS – purchase

4 heavy metals: Planned : 53 → Realised: **53**

5 heavy metals : Planned : 33 → Realised : **34**

*As, Cd, Hg, Pb: 53 + 34 = 87 results*

*F: 34 results*

**LEVEL 2**

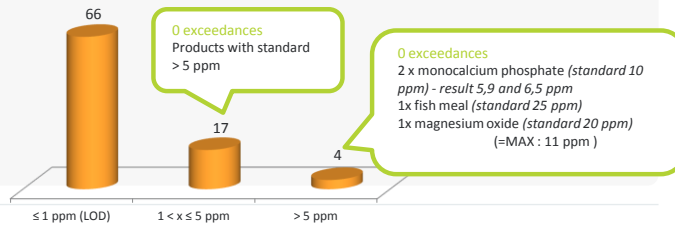
**Heavy metals**

• **ARSENIC**

Directive 2002/32: standard feed materials: 2 ppm – exceptions!

- i.g. Fish meal: 25 ppm
- Phosphates: 10 ppm
- Calcium carbonate: 15 ppm
- Magnesium oxide: 20 ppm

**ARSENIC**



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**LEVEL 2**

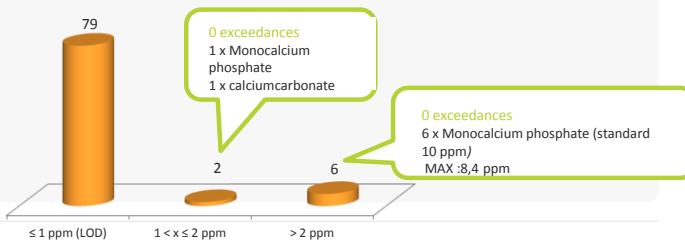
**Heavy metals**

• **CADMIUM**

Directive 2002/32: standard feed materials:

- Vegetable origin: 1 ppm
- Animal origin: 2 ppm
- Mineral origin: 2 ppm – except phosphates: 10 ppm

**CADMIUM**



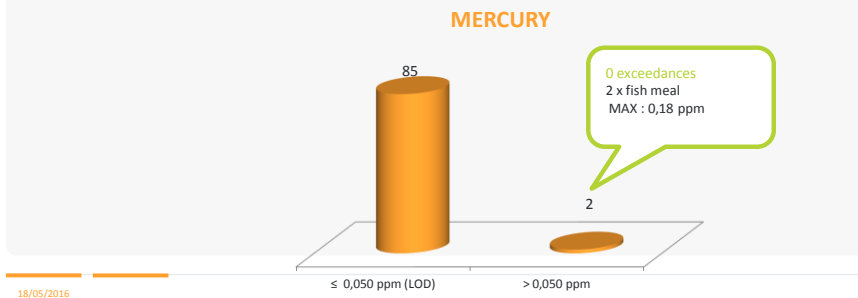
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**LEVEL 2**

**Heavy metals**

• **MERCURY**

- Directive 2002/32: standard feed materials : 0,1 ppm – exceptions!  
 Fish and other water animals + products derived thereof : 0,5 ppm  
 Calcium carbonate : 0,3 ppm

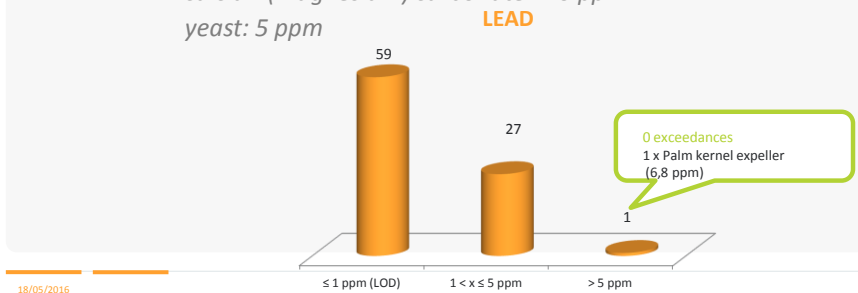


**LEVEL 2**

**Heavy metals**

• **LEAD**

- Directive 2002/32: standard feed materials : 10 ppm  
 Exceptions!  
 green fodder : 30 ppm  
 phosphates: 15 ppm  
 calcium(magnesium) carbonate : 20 ppm  
 yeast: 5 ppm



**LEVEL 2**

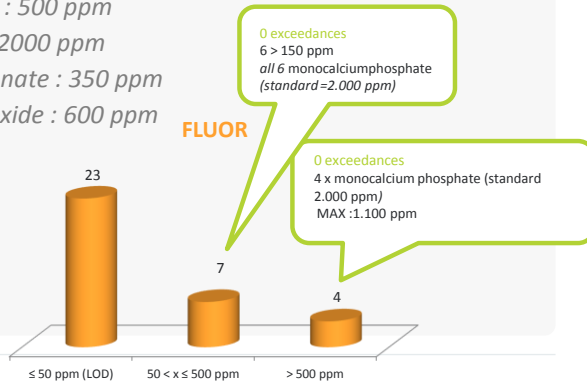
**Heavy metals**

• **FLUORINE** (phosphates, beet pulp, MgO)

Directive 2002/32: standard feed materials : 150 ppm

Exceptions e.g.

- Animal origin : 500 ppm
- Phosphates : 2000 ppm
- Calciumcarbonate : 350 ppm
- Magnesium oxide : 600 ppm



**LEVEL 2**

**Heavy metals**

**PREMIXTURES + MINERAL FEED – purchase**

**4 heavy metals: Planned: 23 → Realised: 23**

- ✓ Premixtures non-BE manufacturer: 3
- ✓ Premixtures BE manufacturer: 12
- ✓ Mineral feed: 8

**LEVEL 2**
**Heavy metals**
**• ARSENIC**

Directive 2002/32: No standard for premixtures  
 Complete animal feed: 2 ppm  
 Mineral feed: 12 ppm

**✓ Premixtures**

ARSENIC	#
≤ 1 ppm (LOD)	4
1 < x ≤ 10 ppm	11
> 10 ppm	1
	16

MAX : 12 ppm

**✓ Mineral feed**

7 results → MAX 12 ppm

**LEVEL 2**
**Heavy metals**
**• CADMIUM**

Directive 2002/32: standard premixtures: 15 ppm  
 Standard mineral feed: 5 ppm (except if ≥ 7% phosphorus)

**✓ Premixtures**

16 results:

- 15 results < 1 ppm (=LOD)
- 1 result > 1 ppm: 1,2 ppm

**✓ Mineral feed**

7 results → MAX: 4,1 ppm

**LEVEL 2**

**Heavy metals**

• **MERCURY**

Directive 2002/32:  
 No standard for premixtures  
 Standard complete animal feed: 0,1 ppm  
 Mineral feed: 0,2 ppm

- ✓ **Premixtures**  
16 results → all < 0,050 ppm (=LOD)
- ✓ **Mineral feed**  
7 results → all < 0,050 ppm (=LOD)

**LEVEL 2**

**Heavy metals**

• **LEAD**

Directive 2002/32  
 Standard premixtures: 200 ppm  
 Standard mineral feed: 15 ppm – except long-term supply: 60 ppm

✓ **Premixtures**

LEAD	#
≤ 1 ppm (LOD)	4
1 < x ≤ 5 ppm	8
> 5 ppm	4
	<b>16</b>

MAX : 53 ppm

- ✓ **Mineral feed**  
7 resultats → Max: 2,3 ppm

**LEVEL 2**

**Heavy metals**

**ADDITIVES – purchase**

**4 heavy metals: Planned: 36 → Realised: 36**

Binders and trace elements

**LEVEL 2**

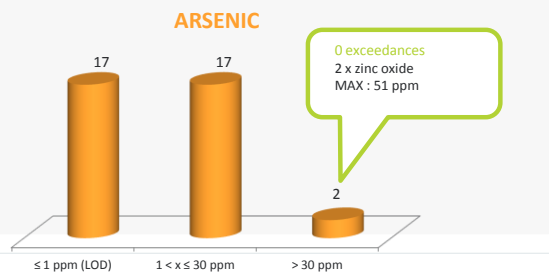
**Heavy metals**

**• ARSENIC**

*Directive 2002/32:*

*Standard additives « compounds of trace elements »: 30 ppm*

*Exceptions: Copper Oxide, manganese oxide, zinc oxide : 100 ppm  
and copper sulphate pentahydrate, copper carbonate : 50 ppm*





**LEVEL 2**

**Heavy metals**

**• CADMIUM**

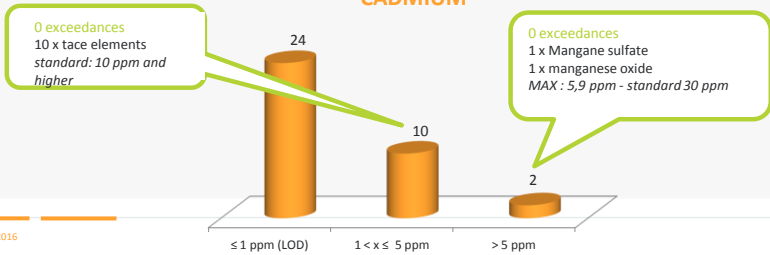
*Directive 2002/32*

*Standard additives « binders and anticaking agents »: 2 ppm*

*Standard additives « compounds of trace elements »: 10 ppm*

*Except Copper Oxide, manganese oxide, zinc oxide, manganese sulphate- monohydrate : 30 ppm*

**CADMIUM**



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**LEVEL 2**

**Heavy metals**

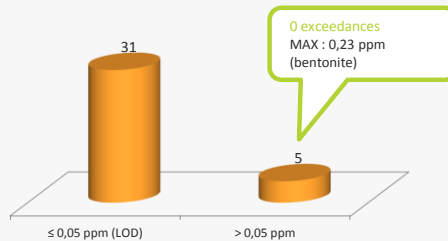
**• MERCURY**

*Directive 2002/32*

*No standard for additives*

*Standard feed materials and compound feed: 0,1 ppm – exceptions!*

**MERCURY**



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**LEVEL 2**

**Heavy metals**

• **LEAD**

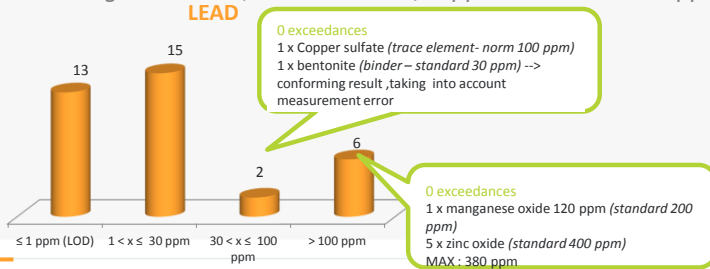


Directive 2002/32

Standard additives « binders and anticaking agents »: 30 ppm  
except clinoptilolite (volcanic origin) : 60 ppm

Standard additives « compounds of trace elements»: 100 ppm  
except zinc oxide: 400 ppm

and manganese oxide, iron carbonate, copper carbonate: 200 ppm



**LEVEL 2**

**OVERVIEW**

- **Additives – purchase**
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
  - Melamine
  - Pesticides
- **Feed materials – purchase**
  - all parameters
- **Premixtures – purchase**
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
- **Mineral feed – purchase**
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs

**LEVEL 2**

**Dioxins & dioxin-like PCBs**

**Dioxins & dioxin-like PCBs:**

Planned: 199 → Realised: **195**

- ✓ Feed materials : 103
- ✓ Premixtures & mineral feed : 23
- ✓ Additives : 69

**LEVEL 2**

**Dioxins & dioxin-like PCBs**

**FEED MATERIALS – purchase**

**• DIOXINS**

No exceedances

- ✓ 102 results ≤ 0,5 ng/kg
- ✓ 1 result > 0,5 ng/kg:
  - 1x fish oil: 0,72 ng/kg

	Action limit (2002/32)	Standard (2002/32)
* (ng WHO-PCCD/F-TEQ/kg)	*	*
Vegetable feed materials	0,5	0,75
Vegetable oil and by-products	0,5	0,75
Mineral feed materials	0,5	0,75
Animal fat (incl. milkfat and egg fat)	0,75	1,5
Other animal products (land animals) (incl. milk(products), eggs, egg products)	0,5	0,75
Fish oil	4	5
Fish and other byproducts	0,75	1,25
Fish proteins, hydrolised, > 20% fat	1,25	1,75

## LEVEL 2

## Dioxins & dioxin-like PCBs

### • DIOXIN-LIKE PCBs

No exceedances

- ✓ 101 results  $\leq 0,35$  ng/kg
- ✓ 2 results  $> 0,35$  ng/kg:
  - 1x fishmeal (Latin-America): 0,36 ng/kg
  - 1x fishoil: 1,50 ng/kg \*\*

* (ng WHO-PCCD/F-TEQ/kg)	Action limit 2002/32 *	Standard 2002/32 *
Vegetable feed materials	0,35	
Vegetable oil and by-products	0,5	
Mineral feed materials	0,35	
Animal fat (incl. milkfat & egg fat)	0,75	
Other animal products (landanimals) (incl. milk(products), eggs, egg products)	0,35	
Fish oil	11	
Fish and other byproducts	2	
fishproteins, hydrolised, > 20% fat	5	

## LEVEL 2

## Dioxins & dioxin-like PCBs

### • SUM OF DIOXINS & DIOXIN-LIKE PCBs

No exceedances

- ✓ 102 results  $\leq 1$  ng/kg
- ✓ 1 result  $> 1$  ng/kg:
  - 1x fishoil: 2,22 ng/kg \*\*

* (ng WHO-PCCD/F-TEQ/kg)	Action limit 2002/32 *	Standard 2002/32 *
Vegetable feed materials		1,25
Vegetable oil and by-products		1,5
Mineral feed materials		1
Animal fat (incl. milkfat & egg fat)		2
Other animal products (landanimals) (incl. milk(products), eggs, egg products)		1,25
Fish oil		20
Fish and other byproducts		4
Fishproteins, hydrolised, > 20% fat		9

**LEVEL 2**

**Dioxins & dioxin-like PCBs**

**PREMIXTURES & MINERAL FEED – purchase**

• **DIOXINS**

No exceedances

- ✓ All 23 results ≤ 0,5 ng/kg
- ✓ MAX: 0,11 ng/kg:  
Premixture < 4%

	Action limit	Standard 2002/32
* (ng WHO-PCCD/F-TEQ/kg)	2002/32 *	*
Premixtures	0,5	1
Mineral feed -> compound feed		0,75

**LEVEL 2**

**Dioxins & dioxin-like PCBs**

• **DIOXIN-LIKE PCBs**

No exceedances

- ✓ All 23 results ≤ 0,35 ng/kg
- ✓ MAX : 0,102 ng/kg:  
Mineral feed purchase\*°

	Action limit	Standard 2002/32
* (ng WHO-PCCD/F-TEQ/kg)	2002/32 *	*
Premixtures	0,35	
Mineral feed -> compound feed	0,5	

**LEVEL 2**
**Dioxins & dioxin-like PCBs**
**SUM OF DIOXINS & DIOXIN-LIKE PCBs**

No exceedances

- ✓ All 23 results  $\leq 1,5$  ng/kg
- ✓ MAX : 0,209 ng/kg:  
Mineral feed purchase \*°

	Action limit 2002/32	Standard 2002/32
* (ng WHO-PCCD/F-TEQ/kg)	*	*
Premixtures		1,5
Mineral feed -> compound feed		1,5

**LEVEL 2**
**Dioxins & dioxin-like PCBs**
**ADDITIVES – purchase**
**DIOXINS**

No exceedances

- ✓ All 69 results  $\leq 0,5$  ng/kg
- ✓ MAX : 0,383 ng/kg:  
zinc oxide (EU + Switzerland – E6) °°

	Action limit 2002/32	Standard 2002/32
* (ng WHO-PCCD/F-TEQ/kg)	*	*
“binders” and “anticaking agents”	0,5	0,75
“compounds of trace elements”	0,5	1

**LEVEL 2**
**Dioxins & dioxin-like PCBs**

- DIOXIN-LIKE PCBs**

No exceedances

- ✓ All 69 results  $\leq 0,35$  ng/kg
- ✓ MAX : 0,129 ng/kg (citric acid (E330))

	Action limit 2002/32 *	Standard 2002/32 *
* (ng WHO-PCCD/F-TEQ/kg)		
“binders” and “anticaking agents”	0,5	
“compounds of trace elements”	0,35	

**LEVEL 2**
**Dioxins & dioxin-like PCBs**

- SUM OF DIOXINS & DIOXIN-LIKE PCBs**

No exceedances

- ✓ All 69 results  $\leq 1,5$  ng/kg
- ✓ MAX : 0,473 ng/kg:  
zinc oxide (EU + Switzerland – E6)

	Action limit 2002/32 *	Standard 2002/32 *
* (ng WHO-PCCD/F-TEQ/kg)		
binders” and “anticaking agents”		1,5
“compounds of trace elements”		1,5

LEVEL 2

## OVERVIEW

- **Additives** – purchase
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
  - Melamine
  - Pesticides
- **Feed materials** – purchase
  - all parameters
- **Premixtures** – purchase
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
- **Mineral feed** – purchase
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs

LEVEL 2

## PCBs

PCBs: Planned: 109 → Realised: **109**

- ✓ Feed materials : 60
- ✓ Premixtures & mineral feed : 24
- ✓ Additives : 25



**LEVEL 2**

**PCBs**

**FEED MATERIALS – purchase**

• **Sum non-dioxin-like PCBs**

No exceedances

- ✓ 58 results ≤ 10 ng/g, whereof 34 < LOD (6 ng/g)
- ✓ 2 results > 10 ng/g:
  - 2x fishoil (MAX: 20,81 ng/g)

	<b>Standard 2002/32 (ppb = ng/g)</b>
Vegetable feed materials	10
Mineral feed materials	10
Animal fat (incl. milk fat and egg fat)	10
Other animal products (land animals) (incl. milk(products), eggs, egg products)	10
Fish oil	175
Fish and other byproducts	30
Fishproteins, hydrolised, > 20% fat	50

**LEVEL 2**

**PCBs**

**PREMIXTURES & MINERAL FEED – purchase**

• **Sum of non dioxin-like PCBs**

No exceedances

- ✓ All 24 results ≤ 6 ng/g (LOD)

	<b>Standard 2002/32 (ppb = ng/g)</b>
Premixtures	10
Mineral feed -> Compound feed	10



### LEVEL 2

### PCBs

#### ADDITIVES – purchase

- **Sum of non dioxin-like PCBs**

No exceedances

✓ All 25 results ≤ 6 ng/g ( LOD)

	<b>Standard 2002/32 (ppb = ng/g)</b>
“Binders” and “Anticaking agents”	10
“Compounds of trace elements”	10



### LEVEL 2

### OVERVIEW

- **Additives** - purchase
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
  - **Melamine**
  - Pesticides
- **Feed materials** – purchase
  - **all parameters**
- **Premixtures** – purchase
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
- **Mineral feed** – purchase
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs

**LEVEL 2**

**Melamine**

**Melamine:** Planned: 43 → Realised: **42**

**FEED MATERIALS – purchase**

- Animal proteins (fishmeal, milk and whey powder), yeast, wheatgluten

**ADDITIVES – purchase**

- Nutritional Additives
- ! Origin: China

Directive 2002/32: standard for animal feed: 2,5 ppm  
except a few additives (urea,...): no standard

- ✓ All 42 results < 2,5 ppm,
  - ✓ Whereof 39 < LOD (0.01 ppm)
  - ✓ MAX: 0,120 ppm (choline chloride)

**LEVEL 2**

**OVERVIEW**

- **Additives – purchase**
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
  - Melamine
  - Pesticides
- **Feed materials – purchase**
  - all parameters
- **Premixtures – purchase**
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
- **Mineral feed – purchase**
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs

**LEVEL 2**

**Pesticides**

**Pesticides:** Planned: 290 → Realised: **284**  
 + planned: 10 analyses on **paraquat** → Realised: **8**  
 + added later: analyses on **glyphosate** → Realised: **11**

In total: 303 results

- ✓ Feed materials : 262+8+11=281
- ✓ Additives (other sensory additives): 22

**LEVEL 2**

**Pesticides**

**FEED MATERIALS – purchase**



• **Pesticides**

Regulation 396/2005 (pesticides) ↑  
 Extensive uncertainty of measurement 50 %  
 → MRL exceedance if the detected level/2 > MRL

**! MRLs only for non processed products**

→ MRL for processed products: use (CONVERSION)FACTORS

taking into account

- ✓ Production process → ! contact supplier/manufacturer
- ✓ Attitude of pesticide (e.g. liposolubility)
- ✓ Pesticide use on crops

e.g. rice – rice bran

LEVEL 2

Pesticides

FEED MATERIALS – purchase

• Pesticides

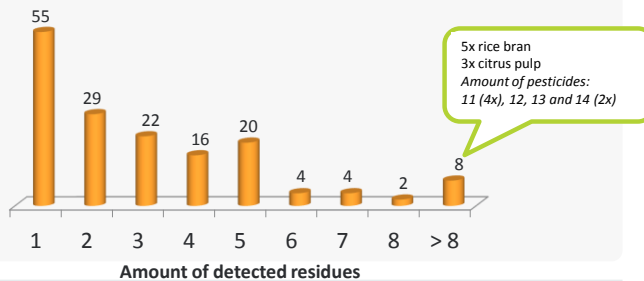
- ✓ 281 samples :
  - In **121** (*Plan 2014: 171*) samples: **NO pesticide residue** found
  - In **160** (*Plan 2014: 110*) samples: **at least 1 pesticide residue** found
    - ❖ Number of residues found in 1 sample : **1 → 14** (*Plan 2014: idem*)
    - ❖ In these 160 samples: in total **47 differents residues** found (*Plan 2014: 55*)

LEVEL 2

Pesticides

- ✓ 281 samples:
  - In **160** samples: **at least 1 pesticide residue** found
    - ❖ Number residues found in 1 sample : **1 → 14**

Number of samples containing x residues







### LEVEL 2

### Pesticides

TOP 10 of the residues found: in which feed materials?

Piperonyl-butoxide has been found in	#
Wheatglutenfeed	16
Maize DDGS (distillers grains by-products)-EU	12
Short wheat flour	8
Barley, barley diets, barley 6 rowed	7
Maize, yellow, France	7
Spelt	6
Rice bran	5
Triticale	5
Maize, yellow, non EU	4
Wheat DDGS (distillers grains by-products)-EU	3
Raw Soybeans	3
Wheat	3
Wheat screenings	2
Wheat bran	2
Wheat gluten meal	2
Soya fatty acids	2
Barley, 2 rowed, malting Barley,extra heavy barley	1
Barley, flaked, crushed	1
Wheat feed	1
Wheat (light)	1
Soybean hulls	1
Maize oil	1
Rye	1
	<b>94</b>



### LEVEL 2

### Pesticides

TOP 10 of the residues found: in which feed materials?

Pirimiphos-methyl has been found in	#
Wheatglutenfeed	13
Short wheat flour	8
Maize DDGS (distillers grains by-products)-EU	7
Maize, yellow, France	6
Maize, yellow, non EU	5
Triticale	5
Soybean oil (crude and refined)	3
Barley, barley diets, barley 6 rowed	2
Wheat	2
Wheat bran	2
Barley, 2 rowed, malting Barley,extra heavy barley	1
Rye	1
Wheat screenings	1
Wheat gluten meal	1
Rice bran	1
Soybean hulls	1
Soya fatty acids	1
Maize oil	1
Sunflower oil (crude)	1
	<b>62</b>

**LEVEL 2**

**Pesticides**

TOP 10 of the residues found: in which feed materials?

Chlorpyrifos-methyl has been found in	#
Wheatgluten feed	17
Short wheat flour	8
Maize, yellow, non EU	4
Wheat	3
Barley, barley diets, barley 6 rowed	2
Maize, yellow, France	2
Wheat gluten meal	2
Wheat DDGS (distillers grains by-products)-EU	2
Rice bran	2
Barley, 2 rowed, malting Barley,extra heavy barley	1
Wheat bran	1
Wheat feed	1
Soybean hulls	1
	<b>46</b>

**LEVEL 2**

**Pesticides**

TOP 10 of the residues found: in which feed materials?

Tebuconazole has been found in	#
Rice bran	12
Speltz	7
Wheatgluten feed	5
Short wheat flour	3
Citruspulp	3
Wheat bran	2
Wheat	1
Triticale	1
Wheat screenings	1
Wheat gluten meal	1
Wheat DDGS (distillers grains by-products)-EU	1
	<b>37</b>



**LEVEL 2**
**Pesticides**

TOP 10 of the residues found: in which feed materials?

Deltamethrin has been found in	#
Wheatglutenfeed	10
Short wheat flour	7
Triticale	4
Maize DDGS (distillers grains by-products)-EU	3
Barley, barley diets, barley 6 rowed	2
Wheat	2
Wheat DDGS (distillers grains by-products)-EU	2
Barley, 2 rowed, malting Barley,extra heavy barley	1
Maize, yellow, France	1
Wheat screenings	1
Wheat gluten meal	1
Rice bran	1
Maize oil	1
	<b>36</b>

**LEVEL 2**
**Pesticides**

TOP 10 of the residues found: in which feed materials?

Cypermethrin has been found in	#
Wheatglutenfeed	9
Citruspulp	8
Short wheat flour	5
Spelt	2
Barley, barley diets, barley 6 rowed	1
Wheat	1
Maize, yellow France	1
Maize, yellow, non EU	1
Wheat screenings	1
Wheat bran	1
Wheat gluten meal	1
Wheat DDGS (distillers grains by-products)-EU	1
Rice bran	1
Rape seed oil (cruded and refined)	1
	<b>34</b>

**LEVEL 2**

**Pesticides**

TOP 10 of the residues found: in which feed materials?

Anthraquinone has been found in		#
Maize DDGS (distillers grains by-products)-EU		9
Citruspulp		4
		<b>13</b>

Tricyclazole has been found in		#
Rice bran		12
		<b>12</b>

Chlorpyrifos-ethyl has been found in		#
Citruspulp		7
Soya fatty acids		2
Rice bran		1
Sunflower oil (crude)		1
		<b>11</b>

Epoxyconazole has been found in		#
Spelt		8
Rice bran		1
		<b>9</b>

**LEVEL 2**

**Pesticides**

In which feed materials pesticide residues were found most frequently

Feed material	Min. 1 pesticide residue has been found: frequency
Wheatglutenfeed	17
Rice bran	14
Spelt	13
Maize DDGS (distillers grains by-products)-EU	13
Soybean oil (crude and refined)	11
Maize, yellow, non EU	10
Citruspulp	10
Maize, yellow, France	9
Triticale	8
Short wheat flour	8
Barley, barley diets, barley 6 rowed	7
Wheat	7
Raw Soybeans	5
Wheat bran	4
Wheat DDGS (distillers grains by-products)-EU	4
Wheat screenings	3
Soybean hulls	3
Rye	2
Wheatgluten meal	2
Soya fatty acids	2
Barley, 2 rowed, malting Barley,extra heavy barley	1
Barley, flaked, crushed	1
Wheat (light)	1
Wheat feed	1
Soy lecithin	1
Maize oil	1
Sunflower oil (crude)	1
Rapeseed oil (crude and refined)	1
	<b>160</b>

**LEVEL 2**

**Pesticides**

**Exceedances?**

☞ Reminder

**! MRLs only for non processed products**

→ MRL for processed products:  
use of (CONVERSION/PROCESSING)FACTORS

**1 exceedance:**

**Spelt - tebuconazole**

MRL: 0,1 mg/kg

Result: 0,27 mg/kg (0,135 mg/kg after taking into account measurement error)

**LEVEL 2**

**Pesticides - PARAQUAT**

**FEED MATERIALS – Purchase**

- **PARAQUAT – extra monitoring**



✓ 8 samples (raw soybeans):

- No residue of paraquat has been detected!

**LEVEL 2**

**Pesticides – GLYFOSAAT**

**FEED MATERIALS – Purchase**

- **GLYPHOSATE – extra monitoring**



- ✓ 11 samples (raw soybeans and soybean hulls):
  - In 4 samples: residues of pglyphosate have been found:  
MAX : 0.44 mg/kg (raw soybeans – MRL: 20 mg/kg)

**LEVEL 2**

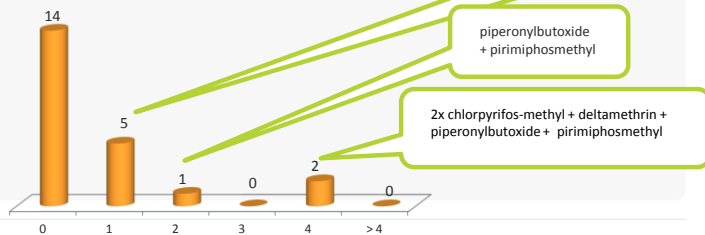
**Pesticides**

**ADDITIVES – purchase**

- **Pesticides**

- ✓ 22 samples:
  - In **14** samples: **NO pesticide residue** has been found
  - In **8** samples: at least **1 pesticide residue** has been found  
*(Plan 2014: 2)*

Number of samples with x residues



## LEVEL 2

## Pesticides

FEED MATERIALS – purchase

ADDITIVES – purchase

- **Pesticides**

More information?

→ OVERVIEW ANALYSIS RESULTS (anonymous):

Analysis > Results > Undesirable substance

<http://www.bemefa.be/Analysis/AnonymousResults.aspx>

## LEVEL 2

## OVERVIEW

- **Additives** – purchase
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
  - Melamine
  - Pesticides
- **Feed materials** – purchase
  - all parameters
    - PAHs
- **Premixtures** – purchase
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
- **Mineral feed** – purchase
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs

**LEVEL 2**
**PAHs**
**FEED MATERIALS – purchase**

FCA BT-01:

 PAHs: Planned: 76 → Realised: **75**

Product	Action-limit (BaPEq µg/kg)	Rejection limit (BaPEq µg/kg)
Fats	15	50
Feed materials or side streams- to be transformed (humidity > 16%)	15	50
Feed materials or side streams- to be transformed (dry process)	15	50
Other feed materials or side streams- to be transformed	50	

PAK's	#
< 15 µg BaPEq/kg (LOD)	71
> 15 µg BaPEq/kg (LOD)	4
	<b>75</b>

**1 actionlimit exceedance**

✓ 3/4 results < 15 µg/kg (measurement error included)  
 ✓ ¼ > 15 µg/kg: 30 µg/kg (measurement error included)  
 (measurement error that has been taken into account:  
 18 µg/kg) = **maize oil**  
 (action limit 15 µg/kg; rejection limit 50 µg/kg)

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**LEVEL 2**
**OVERVIEW**

- **Additives – purchase**
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
  - Melamine
  - Pesticides
- **Feed materials – purchase**
  - all parameters
    - **Mycotoxines**
- **Premixtures – purchase**
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
- **Mineral feed – purchase**
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs

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LEVEL 2

Mycotoxins

FEED MATERIALS – purchase

Mycotoxins: Planned: 371 → Realised: **359**

Aflatoxine B1: Planned: 59 → Realised: **59**

**REMARK:** Mycotoxin-analysis  
 = DON + ZEA + OTA + FUM B1 / B2, T2 / HT2  
 + AFLA B1  
 + AFLA B2 / G1 / G2

→ 359 + 59 = **418 results aflatoxin B1**

→ **359 results other mycotoxins**

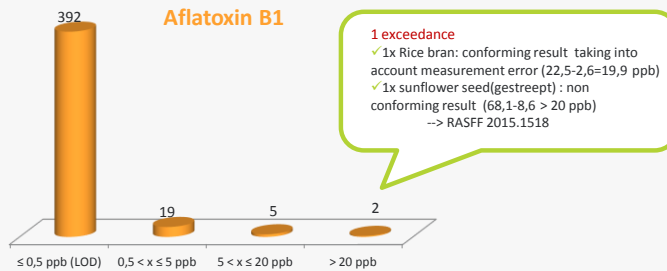
LEVEL 2

Mycotoxins

• **AFLATOXIN B1**

⚖️ *Standard (Directive 2002/32) feed materials: 20 ppb*

*REMARK feed materials for dairy cattle feed or feed materials intended for direct delivery to farmers : 5 ppb*



**LEVEL 2**

**Mycotoxins**

**• AFLATOXIN B2 / G1 / G2**

No legislation



AFLATOXIN B2	#
≤ 0,5 ppb (LOD)	305
< 0,5 ppb	3
	<b>308</b>

3x rice bran (MAX 2 ppb)

AFLATOXIN G1	#
≤ 0,5 ppb (LOD)	308
< 0,5 ppb	0
	<b>308</b>

AFLATOXIN G2	#
≤ 0,5 ppb (LOD)	307
< 0,5 ppb	1
	<b>308</b>

sunflowerseedfeed (1,2 ppb)

**LEVEL 2**

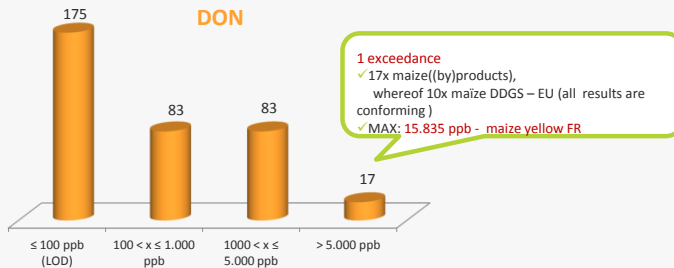
**Mycotoxins**

**• DON (deoxynivalenol)**

Recommendation 2006/576 → guidance value :

cereals and cereal products : 8.000 ppb

maize by-products : 12.000 ppb



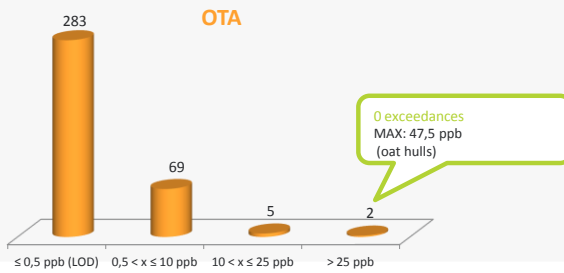


LEVEL 2

Mycotoxins

• **OTA (ochratoxin A)**

Recommendation 2006/576 → guidance value:  
cereals and cereal products : 250 ppb

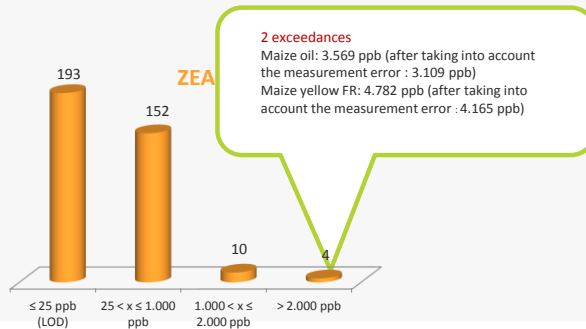


LEVEL 2

Mycotoxins

• **ZEA (zearalenon)**

Recommendation 2006/576 → guidance value:  
cereals and cereal products : 2.000 ppb  
maize by-products : 3.000 ppb

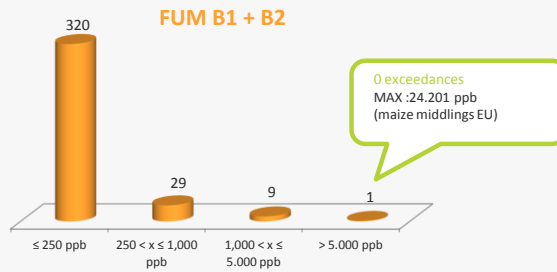


LEVEL 2

Mycotoxins

• FUM B1 + FUM B2 (Fumonisin)

⚖ Recommendation 2006/576 → guidance value:  
maize and maize by-products: 60.000 ppb



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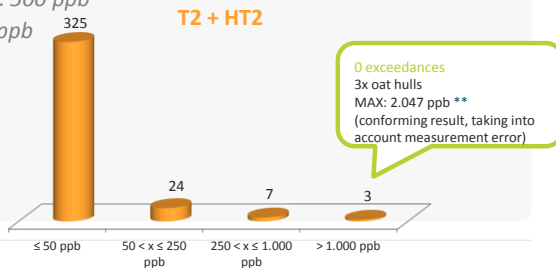
LEVEL 2

Mycotoxins

• T2, HT2

⚖ Recommendation 2013/165: T2+HT2

unprocessed cereals  
barley and maize: 200 ppb  
oats: 1.000 ppb  
wheat, rye and other cereals : 100 ppb  
cereal products for feed and compound feed  
oat milling products : 2.000 ppb (husks)  
other cereal products: 500 ppb  
compound feed: 250 ppb



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**LEVEL 2**

**Mycotoxins**

• **T2, HT2**

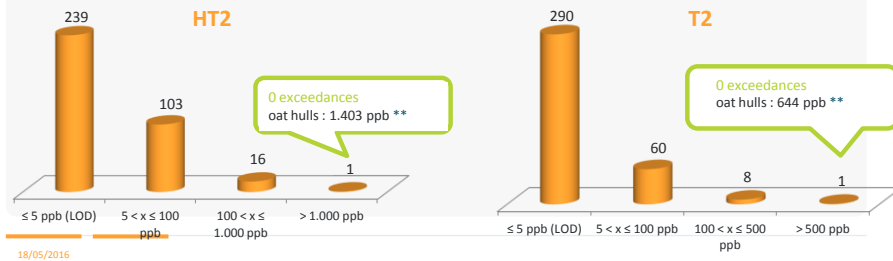
Action limits FASFC: FEED T2/HT2

Compound feed poultry: 400 ppb

Compound feed fattening pigs: 500 ppb

Compound feed piglets: 200 ppb

Compound feed calf: 200 ppb



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**LEVEL 2**

**OVERVIEW**

- **Additives** – purchase
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
  - Melamine
  - Pesticides
- **Feed materials** – purchase
  - all parameters
    - Ergot
- **Premixtures** – purchase
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
- **Mineral feed** – purchase
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs

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LEVEL 2

Ergot

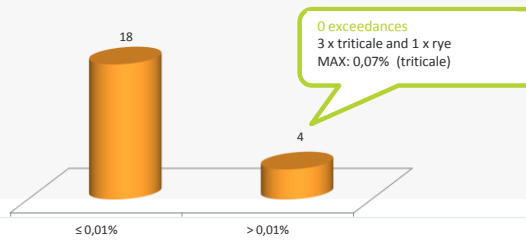
FEED MATERIALS – purchase

Ergot: Planned: 22 → Realised: 22

(6x Rye + 16x triticale)

⚖ Standard (Directive 2002/32): feed materials and compound feed containing unground grains : 0,10% (m/m) → 1.000 mg/kg

Ergot



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LEVEL 2

OVERVIEW

- **Additives** – purchase
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
  - Melamine
  - Pesticides
- **Feed materials** – purchase
  - all parameters
    - Ambrosia
- **Premixtures** – purchase
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
- **Mineral feed** – purchase
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs

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**LEVEL 2**

**Ambrosia**

**FEED MATERIALS – purchase**

**Ambrosia: Planned: 21 → Realised: 21**  
(oil seeds)

⚖ *Standard (Directive 2002/32):*  
*feed materials: 0,005% (m/m) → 50 mg/kg*  
*except millet and sorghum, indirect feeding: 0,020%*

✓ 21 results → all < 0,005%

**LEVEL 2**

**OVERVIEW**

- **Additives – purchase**
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
  - Melamine
  - Pesticides
- **Feed materials – purchase**
  - all parameters
    - hydrocyanic acid
- **Premixtures – purchase**
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
- **Mineral feed – purchase**
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs

**LEVEL 2**

**Hydrocyanic acid**

**FEED MATERIALS – purchase**

**Hydrocyanic acid:** Planned: 52 → Realised: **52**  
*sorghum,  
 linseed, linseed expeller, linseed feed*

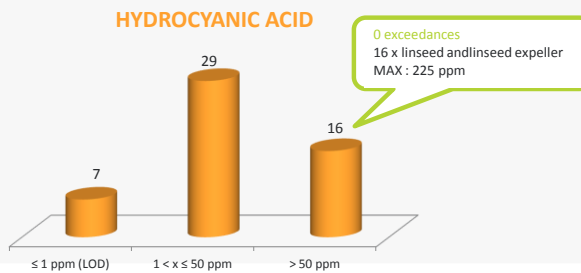
**! HPLC method (EN 16160)**  
 >< EG 71250: interference sorghum, rape seed

**LEVEL 2**

**Hydrocyanic acid**

• **Hydrocyanic acid**

- ⚖️ *Standard (Directive 2002/32): feed materials: 50 ppm – exceptions!*  
*linseed 250 ppm*  
*linseed cake (expeller, meal): 350 ppm*  
*cassava products and almond cakes: 100 ppm*





## LEVEL 2

## OVERVIEW

- **Additives** – purchase
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
  - Melamine
  - Pesticides
- **Feed materials** – purchase
  - all parameters
    - **Salmonella**
- **Premixtures** – purchase
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
- **Mineral feed** – purchase
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs

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## LEVEL 2

## Salmonella

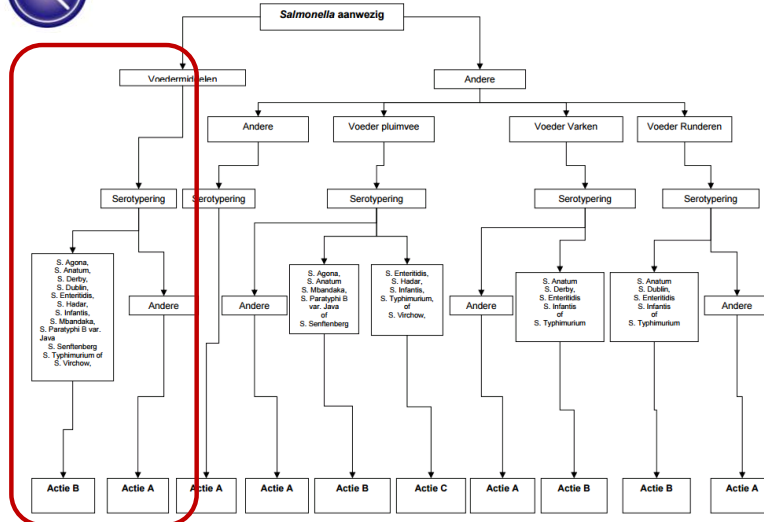
### FEED MATERIALS – purchase

**Salmonella**: Planned: 125 → Realised: **131**

 *Standard: absence / 25g*

- ✓ 126 results → Salmonella: absence in 25g
- ✓ 5 results → Salmonella: presence in 25 g
  - **S.Llandoff** in toasted soybeans → *action A*
  - **S.Kentucky** in soybean meal → *action A*
  - **S.Kedougou** in rapeseed meal → *action A*
  - **S.Idikan** in rapeseed → *action A*
  - **S.Idikan** in rapeseed → *action A*

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Actie	Bij landbouwer	Bij mengvoederfabrikant	Bij handelsa/fabrikant grondstoffen
A	Voedermiddelen & mengvoerders: - Onderzoek bij de landbouwer - Onderzoek leverancier/fabrikant - Waarschuwing <sup>2</sup>	Voedermiddelen & mengvoerders: - Onderzoek bron + maatregelen - Onderzoek bij leverancier/fabrikant - Waarschuwing <sup>2</sup>	Voedermiddelen & mengvoerders: - Onderzoek bron + maatregelen - Onderzoek bij leverancier/fabrikant - Waarschuwing <sup>2</sup>
B	Voedermiddelen & mengvoerders: - Onderzoek bij de landbouwer - Afhankelijk van het onderzoek, maatregelen ter voorkoming van hercontaminatie op het bedrijf (reiniging, ontsmetting) - Informatie PRI - Onderzoek bij leverancier/fabrikant - Waarschuwing <sup>2</sup>	Voedermiddelen (1) - Beslagname voedermiddel aanwezig op bedrijf - Behandeling ( van het VM zelf of via gebruik in mengvoerders (bvb pelletiseren) + bewijs afwezigheid - Informatie afnemers + controle hierop - Beslagname aangemaakte voeders bij fabrikant + bemonstering (n=6) & analyse ⇒ Voor NC B voeders: zie (2) ⇒ Voor NC C voeders: zie (3) & (4) - Onderzoek bron + maatregelen - Onderzoek bij leverancier/fabrikant - RASFF indien noodzakelijk - Waarschuwing <sup>2</sup> Mengvoerders (2) - Beslagname mengvoerders nog aanwezig op het bedrijf - Behandeling + bewijs afwezigheid - Informatie afnemers + controle hierop - Onderzoek bron + maatregelen - RASFF indien noodzakelijk - Waarschuwing <sup>2</sup>	Voedermiddelen & mengvoerders: - Beslagname - Behandeling + bewijs afwezigheid - Informatie afnemers + controle hierop - Onderzoek bij afnemers (zie (1)) - Onderzoek bron + maatregelen - Onderzoek bij leverancier/fabrikant - RASFF indien noodzakelijk - Waarschuwing <sup>2</sup>
C	Mengvoerders (4) - Beslagname van de voeders - Informatie PRI - Onderzoek bij de landbouwer - Afhankelijk van het onderzoek, maatregelen ter voorkoming van hercontaminatie op het bedrijf (reiniging, ontsmetting) - Onderzoek bij leverancier/fabrikant - Waarschuwing <sup>2</sup>	Mengvoerders (3) - Beslagname + recall - Behandeling + bewijs afwezigheid - Informatie afnemers + controle hierop - Informatie PRI - Onderzoek bron + maatregelen - RASFF indien noodzakelijk - Waarschuwing <sup>2</sup>	

<sup>2</sup> Waarschuwing (WS) t.a.v. de verantwoordelijke voor de besmetting. Indien de verantwoordelijk niet kan worden aangeduid WS aan diene bij wie het monster werd genomen. Een waarschuwing zal steeds opgevolgd worden met een nieuwe monsternamen binnen 3 maand. Een 2de waarschuwing zal niet noodzakelijk aanleiding geven tot een PV wanneer de 2 besmettingen niet gerelateerd zijn.



**LEVEL 2**

**OVERVIEW**

- **Additives** – purchase
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
  - Melamine
  - Pesticides
- **Feed materials** – purchase
  - all parameters
    - Insoluble impurities
- **Premixtures** – purchase
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
- **Mineral feed** – purchase
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs

**LEVEL 2**

**Insoluble impurities**

**FEED MATERIALS – purchase**

**Insoluble impurities: Planned: 12 → Realised: 12**  
(ox fat)

*Standard (Reglementation 142/2011):*  
rendered ruminant fat (or mixtures containing rendered ruminant fat): 0,15% (% in weight)

- ✓ 9 results < 0,03 % (LOD)
  - ✓ 3 results > 0,03 % (MAX : 0,10 %)
- no exceedances

**LEVEL 2**

**OVERVIEW**

- **Additives – purchase**
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
  - Melamine
  - Pesticides
- **Feed materials – purchase**
  - All parameters
    - Fungi
- **Premixtures – purchase**
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
- **Mineral feed – purchase**
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs

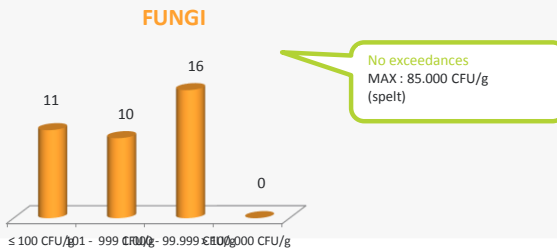
**LEVEL 2**

**Fungi**

**FEED MATERIALS – purchase**

**Fungi: Planned: 39 → Realised: 39**

*FCA BT-01 action limit:*  
*feed materials: 100.000 CFU/g*



## LEVEL 2

## OVERVIEW

- **Additives** – purchase
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
  - Melamine
  - Pesticides
- **Feed materials** – purchase
  - all parameters
    - enterobacteriaceae
- **Premixtures** – purchase
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
- **Mineral feed** – purchase
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs

## LEVEL 2

## Enterobacteriaceae

### FEED MATERIALS – purchase

Entero: Planned: 5 → Realised: 5

*Fishmeal, egg products*

FCA AT-11: 300 CFU/g

- ✓ 4 results  $\leq 0,10$  CFU/g
  - ✓ 1 result  $> 0,10$  CFU/g:
    - Fishmeal (Scandinavian): 20 CFU/g
- no exceedances

**LEVEL 2**

**OVERVIEW**

- **Additives – purchase**
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
  - Melamine
  - Pesticides
- **Feed materials – purchase**
  - all parameters
    - Antibiotics
- **Premixtures – purchase**
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
- **Mineral feed – purchase**
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs

**LEVEL 2**

**Antibiotics**

**FEED MATERIALS – purchase**

**Antibiotics: Planned: 23 → Realised: 23**

*wheat DDGS, maize DDGS,  
dried yeast (by-products of bio-ethanol production ),  
vinasses ((by-products of bio-ethanol production )*



	Standard (ppb)	Results (ppb)
virginamycine	absence	< 25
decoquinat	400	< 100
semduramycine	250	< 62,5
salinomycine	700	< 175
monensin	1250	< 312,5
halofuginone	30	< 15
lasalocid	1250	< 312,5
nicarbazin	1250	< 312,5
robenidine	700	< 175
diclazuril	10	< 2,5
maduramycine	50	< 12,5
narasin	700	< 175

No exceedances  
All results < LOD

**LEVEL 2**

**Chloramphenicol**

**FEED MATERIALS – purchase**

Planned: 11 → Realised: 11

*fermentation products:  
digestibility enhancers, amino acids, intestinal stabilizers*



*Use not authorized in the EU*

✓ All results < LOD (0,26 ppb)



**LEVEL 2**

**OVERVIEW**

- **Additives – purchase**
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
  - Melamine
  - Pesticides
- **Feed materials – purchase**
  - all parameters
    - GMO
- **Premixtures – purchase**
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs
- **Mineral feed – purchase**
  - Heavy metals
  - Dioxins & dioxin-like PCBs
  - PCBs

LEVEL 2

GMO

FEED MATERIALS – purchase

Planned: 12 → Realised: 11

*Additives Chinese origin  
(vegetable carrier)*



✓ All samples: NO vegetable material containing GMO has been found

Results

- Level 1
- Level 2
- Level 3





### LEVEL 3

### OVERVIEW

- **Compound feed** – production
  - Mycotoxins
  - Salmonella
- **Mineral feed** – production
  - Heavy metals



### LEVEL 3

### OVERVIEW

- **Compound feed** – production
  - Mycotoxins
  - Salmonella
- **Mineral feed** – production
  - Heavy metals

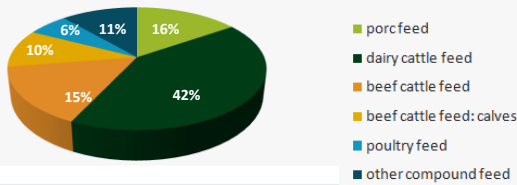
LEVEL 3

Mycotoxins

COMPOUND FEED – Production

**Mycotoxins: Planned: 149 → Realised: 149**  
*Objective: 1/3 of the samples (dairy cattle feed)*

**Mycotoxin analysis:**  
**Sample distribution in compound feed (production)**



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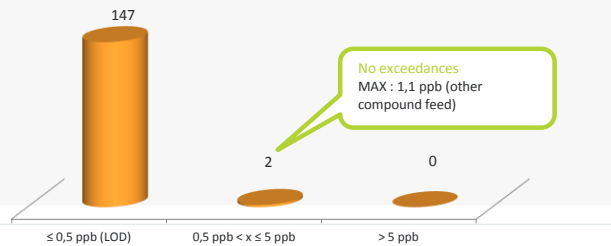
LEVEL 3

Mycotoxins

• **AFLATOXIN B1**

*Standard (Directive 2002/32) complementary feed and complete feedingstuffs: 10 ppb*  
*Except: Dairy caws, calves, dairy sheep , lambs, dairy goats, baby goat, piglets, young poultry: 5 ppb*  
*beef, sheep, goat, porc, poultry: 20 ppb (except the exceptions mentioned above)*

**AFLATOXIN B1**



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**LEVEL 3**

**Mycotoxins**

• **AFLATOXIN B2 / G1 / G2**

No legislation

- ✓ Aflatoxin B2: all results < LOD (1 ppb)
- ✓ Aflatoxin G1: all results < LOD (0,5 ppb)
- ✓ Aflatoxin G2: all results < LOD (1 ppb)



**LEVEL 3**

**Mycotoxins**

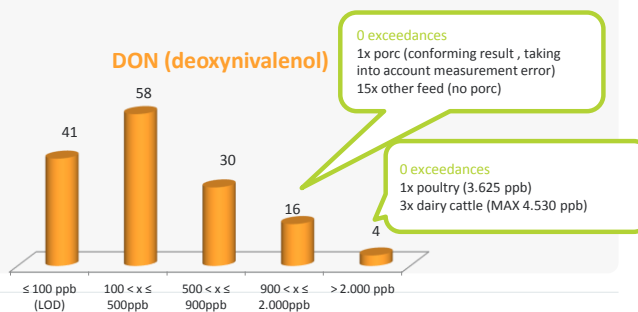
• **DON (deoxynivalenol)**

Recommendation 2006/576 → guidance values

Complementary and complete feedingstuffs: 5.000 ppb

except porc: 900 ppb

except calf, lamb, baby goat : 2.000 ppb



**LEVEL 3**

**Mycotoxins**

• **OTA (ochratoxin A)**

⚖ Recommendation 2006/576 → guidance values  
 complementary feed and complete feedingstuffs :  
 porc: 50 ppb  
 poultry: 100 ppb

No exceedances

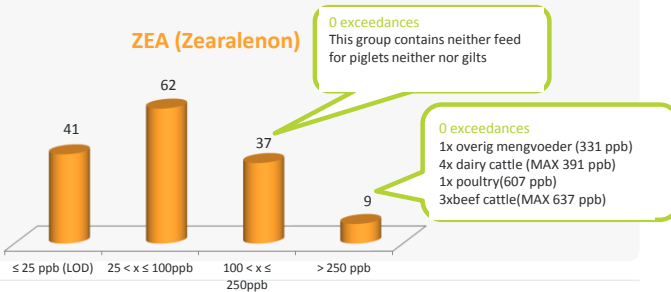
- ✓ all 149 results → < 50 ppb
  - whereof 129 < LOD (1 ppb)
  - MAX:44.1 ppb (beef cattle feed)

**LEVEL 3**

**Mycotoxins**

• **ZEA (zearalenon)**

⚖ Recommendation 2006/576 → guidance values  
 complementary feed and complete feedingstuffs :  
 piglet, gilts: 100 ppb  
 sow, fattening pigs: 250 ppb  
 calf, dairy cattle, sheep, goat: 500 ppb

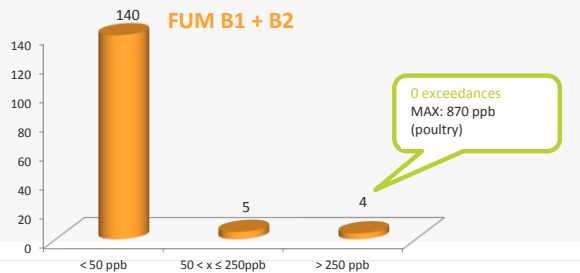


**LEVEL 3**

**Mycotoxins**

• **FUM B1 + FUM B2 (Fumonisin)**

⚖️ Recommendation 2006/576 → guidance values complementary feed and complete feedingstuffs :  
 porc, horse: 5.000 ppb  
 poultry,calve, lamb, baby goat: 20.000 ppb  
 adult ruminant: 50.000 ppb



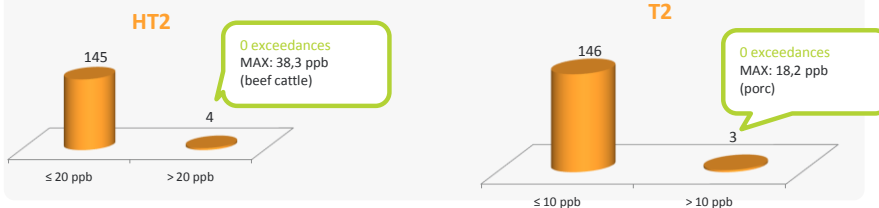
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**LEVEL 3**

**Mycotoxins**

• **T2, HT2**

⚖️ Action limits FASFC: FEED T2/HT2  
 Compound feed poultry: 400 ppb  
 Compound feed fattening pig: 500 ppb  
 Compound feed piglet: 200 ppb  
 Compound feed calve: 200 ppb  
 Recommendation 2013/165: T2+HT2  
 Compound feed: 250 ppb



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**LEVEL 3**

**OVERVIEW**

- **Compound feed** – production
  - Mycotoxins
  - **Salmonella**
  
- **Mineral feed** – production
  - Heavy metals

**LEVEL 3**

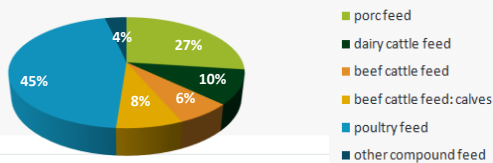
**Salmonella**

**COMPOUND FEED – Production**

**Salmonella: Planned: 149 → Realised: 170**

*Objective: 50% poultry feed, 30 % pig feed, 20% beef cattle (dairy cattle, beef cattle, calves)*

**Salmonella analysis:**  
**Sample distribution in compound feed (production)**



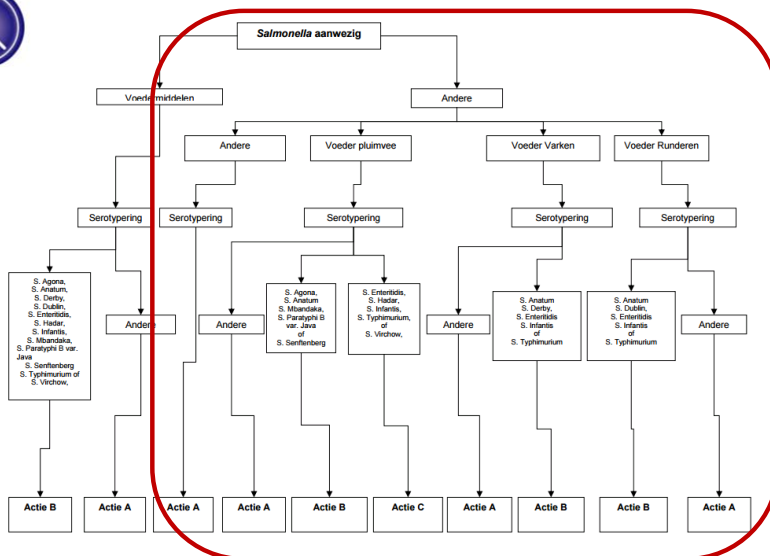
### LEVEL 3

### Salmonella

#### • SALMONELLA

Standard: absence in 25 g

- ✓ 168 results → Salmonella absence in 25 g
- ✓ 2 results → Salmonella presence in 25 g
  - S. **Kentucky** in **porcfeed** → **action A**
  - S. **Idikan** in **dairy cattlefeed** → **action A**





Actie	Bij landbouwer	Bij mengvoederfabrikant	Bij handelaar/fabrikant grondstoffen
A	Voedermiddelen & mengvoeders: - Onderzoek bij de landbouwer - Onderzoek leverancier/fabrikant - Waarschuwing <sup>2</sup>	Voedermiddelen & mengvoeders: - Onderzoek bron + maatregelen - Onderzoek bij leverancier/fabrikant - Waarschuwing <sup>2</sup>	Voedermiddelen & mengvoeders: - Onderzoek bron + maatregelen - Onderzoek bij leverancier/fabrikant - Waarschuwing <sup>2</sup>
B	Voedermiddelen & mengvoeders: - Onderzoek bij de landbouwer - Afhankelijk van het onderzoek, maatregelen ter voorkoming van hercontaminatie op het bedrijf (reiniging, ontsmetting) - Informatie PRI - Onderzoek bij leverancier/fabrikant - Waarschuwing <sup>2</sup>	Voedermiddelen (1) - Beslagname voedermiddel aanwezig op bedrijf - Behandeling ( van het VM zelf of via gebruik in mengvoeders (bvz pelletiseren) + bewijs afwezigheid - Informatie afnemers + controle hierop - Beslagname aangemaakte voeders bij fabrikant + bemonstering (n=5) & analyse ⇒ Voor NC B voeders: zie (2) ⇒ Voor NC C voeders: zie (3) & (4) - Onderzoek bron + maatregelen - Onderzoek bij leverancier/fabrikant - RASFF indien noodzakelijk - Waarschuwing <sup>2</sup> Mengvoeders (2) - Beslagname mengvoeders nog aanwezig op het bedrijf - Behandeling + bewijs afwezigheid - Informatie afnemers + controle hierop - Onderzoek bron + maatregelen - RASFF indien noodzakelijk - Waarschuwing <sup>2</sup>	Voedermiddelen & mengvoeders: - Beslagname - Behandeling + bewijs afwezigheid - Informatie afnemers + controle hierop - Onderzoek bij afnemers (zie (1)) - Onderzoek bron + maatregelen - Onderzoek bij leverancier/fabrikant - RASFF indien noodzakelijk - Waarschuwing <sup>2</sup>
C	Mengvoeders (4) - Beslagname van de voeders - Informatie PRI - Onderzoek bij de landbouwer - Afhankelijk van het onderzoek, maatregelen ter voorkoming van hercontaminatie op het bedrijf (reiniging, ontsmetting) - Onderzoek bij leverancier/fabrikant - Waarschuwing <sup>2</sup>	Mengvoeders (3) - Beslagname + recall - Behandeling + bewijs afwezigheid - Informatie afnemers + controle hierop - Informatie PRI - Onderzoek bron + maatregelen - RASFF indien noodzakelijk - Waarschuwing <sup>2</sup>	

<sup>2</sup> Waarschuwing (WS) t.a.v. de verantwoordelijke voor de besmetting. Indien de verantwoordelijk niet kan worden aangeduid WS aan diegene bij wie het monster werd genomen. Een waarschuwing zal steeds opgevolgd worden met een nieuwe monsternamen binnen 3 maand. Een 2de waarschuwing zal niet noodzakelijk aanleiding geven tot een PV wanneer de 2 besmettingen niet gerelateerd zijn.

## LEVEL 3

## OVERVIEW

- **Compound feed – production**
  - Mycotoxins
  - Salmonella
- **Mineral feed – production**
  - Heavy metals

LEVEL 3

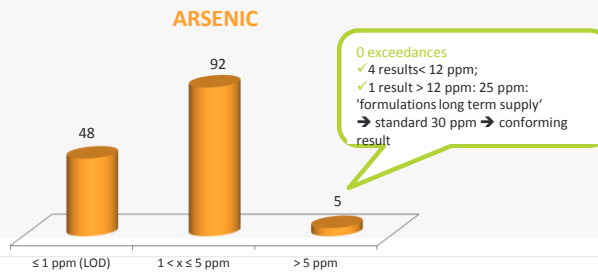
Heavy metals

MINERAL FEED – Production

4 heavy metals: Planned: 143 → Realised: 145

• ARSENIC

Directive 2002/32 standard mineral feed: 12 ppm (+ exceptions!)



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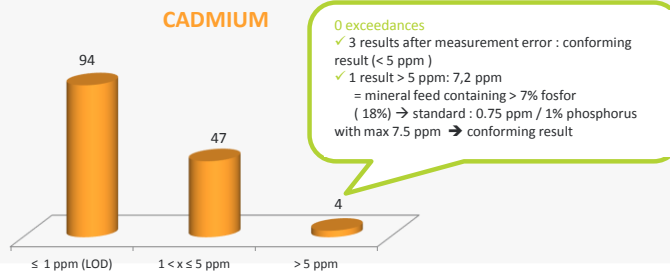
LEVEL 3

Heavy metals

MINERAL FEED – Production

• CADMIUM

Directive 2002/32 standard mineral feed: 5 ppm (depends on the phosphorus level)



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**LEVEL 3**

**Heavy metals**

• **MERCURY**

Directive 2002/32 Standard mineral feed: 0,2 ppm

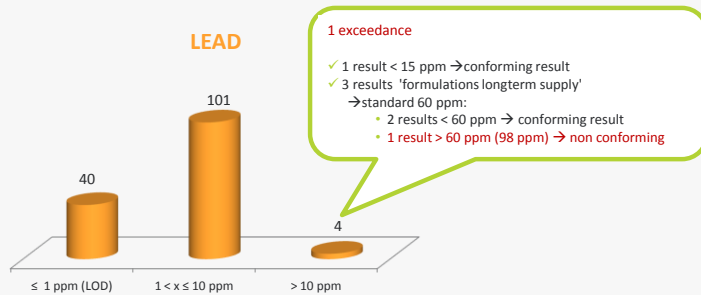
- ✓ No exceedances  
all results < LOD (0,05 ppm)

**LEVEL 3**

**Heavy metals**

• **LEAD**

Directive 2002/32 Standard mineral feed: 15 ppm  
Except «long-term supply particular nutritional purposes »:  
60 ppm





## Plan 2015 – OVERVIEW non-conforming results

### LEVEL 1

No exceedances



### LEVEL 2

parameter	feed	result	Standard /guidance value/MRL
afatoxin B1	sunflowerseed striped	68,1 ppb	20 ppb (Regulation 2002/32)
ZEA	Maize oil	3.569 ppb	3.000 ppb (guidance value)
ZEA	maize yellow Fr	4.782 ppb	2.000 ppb (guidance value)
DON	maize yellow Fr	15.835 ppb	8.000 ppb (guidance value)
PAK's	Maize oil	30 µg BaPEq / kg	15 µg BaPEq / kg (action limit FCA standard)
tebuconazole (pesticide)	spelt	0,27 mg/kg	0,1 mg/kg MRL
Salmonella Llandoff	Soybeans toasted	presence in 25 g	Absence in 25 g
Salmonella Kentucky	Soybean meal	presence in 25 g	Absence in 25 g
Salmonella Kedougou	Rapeseed meal	presence in 25 g	Absence in 25 g
Salmonella Idikan	rapeseed	presence in 25 g	Absence in 25 g
Salmonella Idikan	rapeseed	presence in 25 g	Absence in 25 g

### LEVEL 3

parameter	feed	result	Standard /guidance value/MRL
Lead	Mineral feed longterm supply	98 ppm	60 ppm (standard Regulation 2002/32)
Salmonella Kentucky	Porc feed	presence in 25 g	Absence in 25 g
Salmonella Idikan	Dairy cattle feed	presence in 25 g	Absence in 25 g

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## Plan 2015 – Results [www.bemefa.be](http://www.bemefa.be)

- 1) **Company results** (individual + sector)
- 2) **Anonymous overview** of all results (own company + other manufacturers)
- 3) **Sector overview:** Treatment and summary



18/05/2016



Thank you for your attention!

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