

SIMPÓSIO SOBRE DIOXINAS NA ALIMENTAÇÃO ANIMAL

**Dúvidas e preocupações da indústria sob a
perspectiva da Indústria Integradora**



Valter João Vivan Júnior.

Pedro Leopoldo, 19 de dezembro de 2016.

FACT:

Reason:	China Physicochemical Notification AQSIQ SIF 1001.
AQSIQ Notification:	DIOXIN
Product:	Chicken meat from the Industry Plant under SIF 1001 control.
Production dates involved:	<p>17, 18 and 29 th March 2015: Health Certificates (IHCs) n° 01054/1001/15, shipped on 31/03/2015, n° 00896/1001/15, shipped on 20/03/2015,</p> <p>16, 25 and 27 th April 2015 and 4, 5, 6, 7, 8 and 09 th May 2015: Health Certificates n° 02101/1001/15, shipped on 02/06/2015,</p> <p>8, 9, 13, 15, 16, 18, 19, 20 and 21 th May 2015: Health Certificates n° 02415/1001/15, shipped on 19/06/2015.</p>

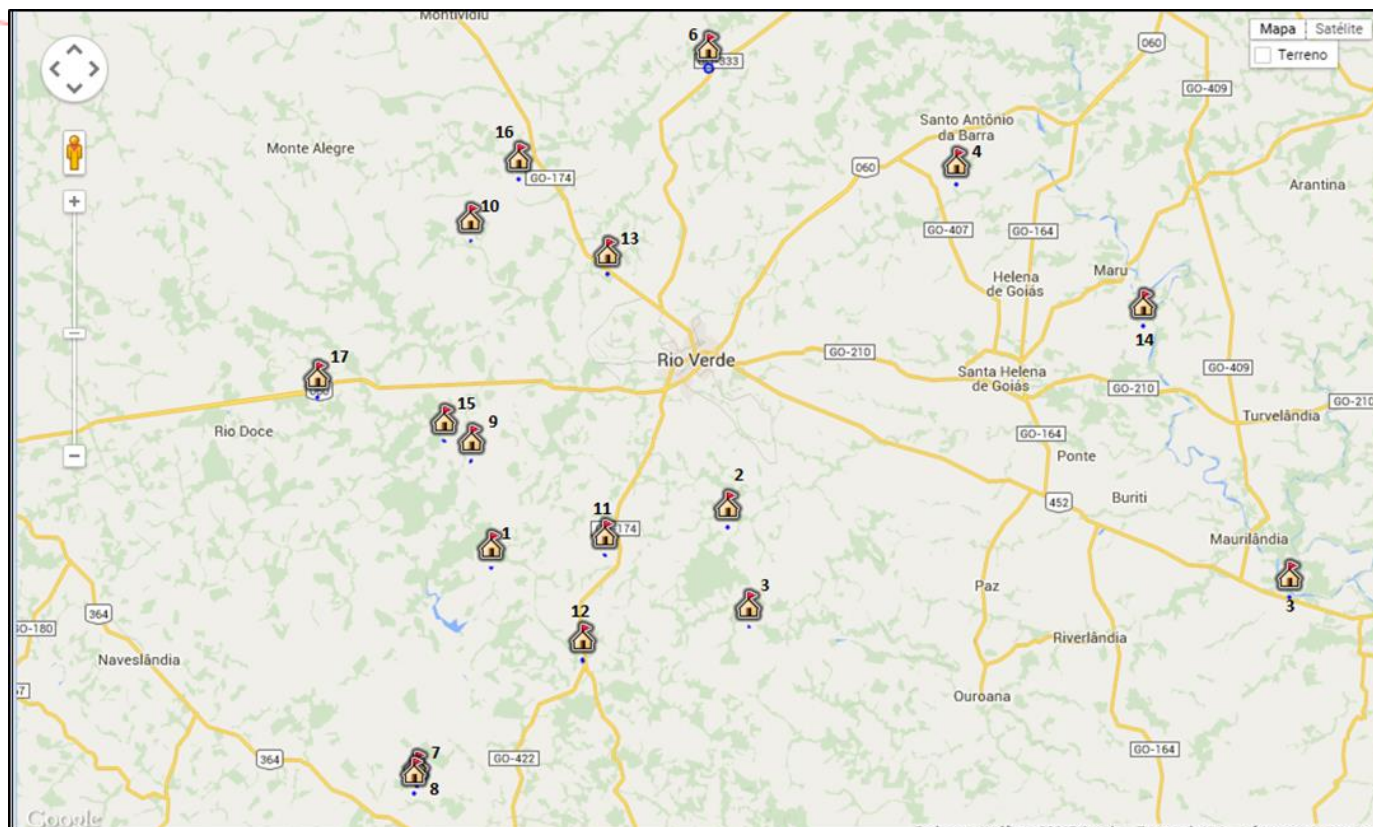
BROILER INTEGRATION SYSTEM - SIF 1001



- ✓ 168 farms.
- ✓ 240 Units, each Unit with four barns, that comprise one epidemiological unit.
- ✓ Total of 980 barns, with restricted entry.
- ✓ Inputs (heating gas, feed, vaccines, medications and products) are provided exclusively by BRF, as well as training and technical and veterinary assistance.



FARMS GEOREFERENCING SYSTEM:



LEGENDA - Georreferenciamento Integração Aves

ID	DESCRICAO	Aviários	LATITUDE	LONGITUDE
1	AGROPECUARIA SETE LEGUAS	1 a 4	-18,00177	-51,13624
2	ANDRE LUIZ ABREU FERREIRA	1 a 4	-17,63298	-50,82501
3	ANGELO THOMAZ LANDIM	3 e 4	-17,76986	-50,42828
4	CLAUDIO POGERE	5 e 6	-17,74153	-51,25019
5	CLEUDSON RODRIGUES DA TRINDADE	1 e 3	-17,54952	-51,42408
6	EDILSON MORAES DE PAIVA E OUTROS	1 a 4	-18,05336	-50,47383
7	EUGENIO A BUENO FERREIRA	1 a 4	-18,12899	-51,04771
8	FABIO DE OLIVEIRA FERREIRA	1 a 4	-18,01407	-51,14012
9	GEZO RODRIGUES DE ALMEIDA JUNIOR	1 a 4	-17,65532	-50,62036
10	IDELTON MESQUITA SILVA	5 a 8	-18,096944	-50,206944
11	JOAO BARBOSA DE FARIA	1 a 4	-17,76986	-50,42828
12	JOELSON BAGNARA	1 a 4	-18,01407	-51,14012
13	JOSE LUIZ SIMONETTO	5 a 8	-17,84934	-51,32781
14	LUIZ CARDOZO	2	-17,74153	-51,25019
15	TEREZINHA COSTENARO DE MARTINI	1, 3 e 4	-17,30595	-51,36354
16	TIMOTHY JAY BURNS	1	-17,68507	-50,56307
17	VALDIR DE ROSSI	9 a 12	-17,96883	-51,0938



CHRONOLOGY OF FACTS:

- **30/07/15: Official Report Received by MAPA showing traces of Dioxin in poultry meat;**
- **17/08/15: Conclusion about first stage of research and official report to MAPA;**
- **26/08/15: Meeting with MAPA;**
- **27/08/15: to 03/09 Research Stage II, with external technical assistance;**
- **04/09/15: Conclusion about Stage II of investigation;**
- **11/09/15: Presentation of research and action plans to MAPA;**
- **19/10/15: MAPA's Supervision in BRF's feed mill;**
- **14/04/16: Technical Note nº 24/2016/SDA/GM/MAPA - Conclusion of the investigation to Chinese Authorities.**

INVESTIGATION OF THE CAUSES:

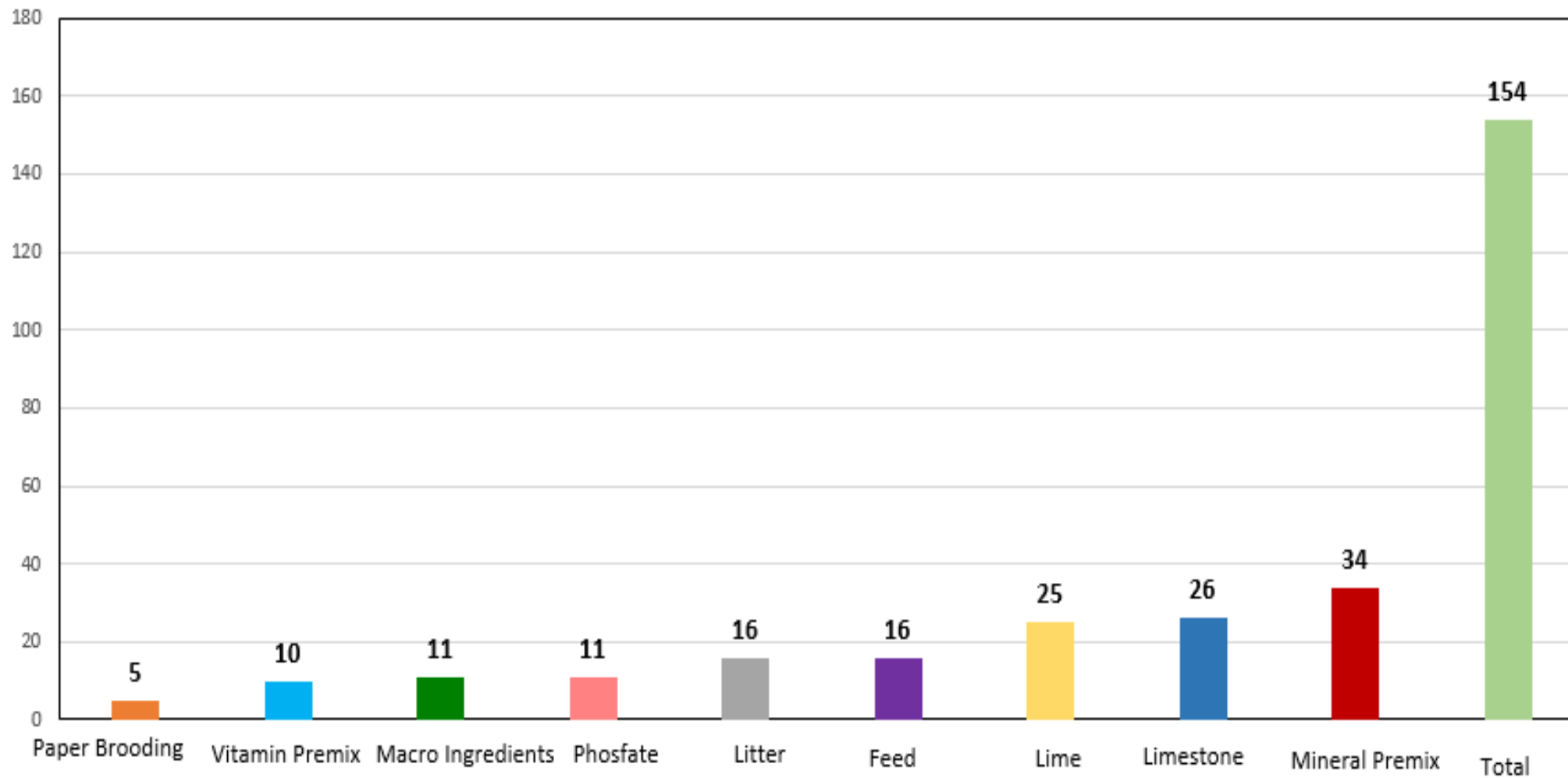
Possibilities for contamination with dioxins and furans:

- ✓ **Premix ingredients**
- ✓ **Litter**
- ✓ **Animal feed**
- ✓ **Flour/ Animal meal**
- ✓ **Final Product**

INVESTIGATION OF THE CAUSES:



Dioxin Analysis



INVESTIGATION OF THE CAUSES:



None of the Dioxins analysis results have shown contamination in **LIME** used in integration system, so this hypothesis was excluded.

Etapa	Descrição	Amostra	Data da amostra/coleta	Laboratório	Data de envio	Resultados (ng OMS-TEQ/kg)	Nº do laudo
Integração	Cal	Cal Cisne	30/07/2015	CRONOLAB	30/07/2015	N/D	13616/2015
Integração	Cal	Cal Sscal	30/07/2015	CRONOLAB	30/07/2015	N/D	13617/2015
Integração	Cal	Resíduos de integração - Nair (Cal Cisne)	30/07/2015	CRONOLAB	30/07/2015	N/D	13629/2015
Integração	Cal	Resíduos de integração - Sandro (SScal)	30/07/2015	CRONOLAB	30/07/2015	N/D	13628/2015
Integração	Cal	Cal - Raimundo av. 13	01/08/2015	CRONOLAB	01/08/2015	N/D	13685/2015
Integração	Cal	Cal André	01/08/2015	CRONOLAB	01/08/2015	N/D	13675/2015
Integração	Cal	Cal Cardozo	01/08/2015	CRONOLAB	01/08/2015	N/D	13688/2015
Integração	Cal	Cal Cisne - Carlos B.	01/08/2015	CRONOLAB	01/08/2015	N/D	13683/2015
Integração	Cal	Cal Cisne - Euripedes Cruvinel	01/08/2015	CRONOLAB	01/08/2015	N/D	13684/2015
Integração	Cal	Cal Cisne - Idelton	01/08/2015	CRONOLAB	01/08/2015	N/D	13686/2015
Integração	Cal	Cal Cisne - Soerger	01/08/2015	CRONOLAB	01/08/2015	N/D	13680/2015
Integração	Cal	Cal Divino Coelho	01/08/2015	CRONOLAB	01/08/2015	N/D	13678/2015
Integração	Cal	Cal Enesio	01/08/2015	CRONOLAB	01/08/2015	N/D	13682/2015
Integração	Cal	Cal Enio Mendonça lote passado	01/08/2015	CRONOLAB	01/08/2015	N/D	13676/2015
Integração	Cal	Cal Fredi 3	01/08/2015	CRONOLAB	01/08/2015	N/D	13679/2015
Integração	Cal	Cal Iron	01/08/2015	CRONOLAB	01/08/2015	N/D	13674/2015
Integração	Cal	Cal João Barbosa	01/08/2015	CRONOLAB	01/08/2015	N/D	13681/2015
Integração	Cal	Cal Leticia	01/08/2015	CRONOLAB	01/08/2015	N/D	13673/2015
Integração	Cal	Cal Raimundo - núcleo 7 av. 25	01/08/2015	CRONOLAB	01/08/2015	N/D	13689/2015
Integração	Cal	Cal Raimundo de Rossi av. 20	01/08/2015	CRONOLAB	01/08/2015	N/D	13687/2015
Integração	Cal	Cal Renato	01/08/2015	CRONOLAB	01/08/2015	N/D	13677/2015
Integração	Cal	Cal - Claudio av. 03	03/08/2015	CRONOLAB	04/08/2015	N/D	13924/2015
Integração	Cal	Cal - Gezo (hidratado)	03/08/2015	CRONOLAB	04/08/2015	N/D	13925/2015
Integração	Cal	Resíduos de integração - Claudio Pogere	03/08/2015	CRONOLAB	04/08/2015	N/D	13923/2015
Integração	Cal	Resíduos de integração - Luiz Cardozo	03/08/2015	CRONOLAB	04/08/2015	N/D	13922/2015

INVESTIGATION OF THE CAUSES:

None of the Dioxins analysis results have shown contamination in **CALCITIC LIMESTONE** used in integration system feed, so this hypothesis was excluded.

Etapa	Descrição	Amostra	Data da amostra/coleta	Laboratório	Data de envio	Resultados (ng OMS-TEQ/kg)	Nº do laudo
Ingredientes	Calcário	Calcário Belocal.Fab.:22/02/15.Lote 22/02/15. Data de receb.:25/02/15	03/08/2015	CRONOLAB	04/08/2015	N/D	13738/2015
Ingredientes	Calcário	Calcário Fornecedor Araguaia 07.03.2015	03/08/2015	CRONOLAB	04/08/2015	N/D	13745/2015
Ingredientes	Calcário	Calcário Fornecedor Belocal 03.03.2015	03/08/2015	CRONOLAB	04/08/2015	N/D	13705/2015
Ingredientes	Calcário	Calcário Fornecedor Belocal 03.03.2015	03/08/2015	CRONOLAB	04/08/2015	N/D	13742/2015
Ingredientes	Calcário	Calcário Fornecedor Belocal 04.03.2015	03/08/2015	CRONOLAB	04/08/2015	N/D	13743/2015
Ingredientes	Calcário	Calcário Fornecedor Belocal 06.03.2015	03/08/2015	CRONOLAB	04/08/2015	N/D	13744/2015
Ingredientes	Calcário	Calcário Fornecedor Belocal 09.03.2015	03/08/2015	CRONOLAB	04/08/2015	N/D	13747/2015
Ingredientes	Calcário	Calcário Fornecedor Belocal 12.03.2015	03/08/2015	CRONOLAB	04/08/2015	N/D	13749/2015
Ingredientes	Calcário	Calcário Fornecedor Belocal 13.03.2015	03/08/2015	CRONOLAB	04/08/2015	N/D	13750/2015
Ingredientes	Calcário	Calcário Fornecedor Belocal 17.03.2015	03/08/2015	CRONOLAB	04/08/2015	N/D	13751/2015
Ingredientes	Calcário	Calcário Fornecedor Belocal 18.03.2015	03/08/2015	CRONOLAB	04/08/2015	N/D	13753/2015
Ingredientes	Calcário	Calcário Fornecedor Belocal 19.03.2015	03/08/2015	CRONOLAB	04/08/2015	N/D	13752/2015
Ingredientes	Calcário	Calcário Fornecedor Belocal 23.02.2015	03/08/2015	CRONOLAB	04/08/2015	N/D	13739/2015
Ingredientes	Calcário	Calcário Fornecedor Belocal 25.02.2015	03/08/2015	CRONOLAB	04/08/2015	N/D	13740/2015
Ingredientes	Calcário	Calcário Fornecedor Belocal 26.02.2015	03/08/2015	CRONOLAB	04/08/2015	N/D	13741/2015
Ingredientes	Calcário	calcário Fornecedor Belocal 27.01.2015	03/08/2015	CRONOLAB	04/08/2015	N/D	13703/2015
Ingredientes	Calcário	Extra calcário Araguaia 21.07.2015	03/08/2015	CRONOLAB	04/08/2015	N/D	13706/2015
Ingredientes	Calcário	Extra calcário Fornecedor Belocal 08.03.2015	03/08/2015	CRONOLAB	04/08/2015	N/D	13746/2015
Ingredientes	Calcário	Extra calcário Fornecedor Belocal 11.03.2015	03/08/2015	CRONOLAB	04/08/2015	N/D	13748/2015
Ingredientes	Calcário	Extra calcário Fornecedor Belocal 20.03.2015	03/08/2015	CRONOLAB	04/08/2015	N/D	13754/2015
Ingredientes	Calcário	Extra calcário Fornecedor Belocal 22.02.2015	03/08/2015	CRONOLAB	04/08/2015	N/D	13704/2015
Ingredientes	Calcário	Extra calcário Fornecedor Belocal 25.03.2015	03/08/2015	CRONOLAB	04/08/2015	N/D	13755/2015
Ingredientes	Calcário	Extra calcário Fornecedor Belocal 25.03.2015	03/08/2015	CRONOLAB	04/08/2015	N/D	13765/2015
Ingredientes	Calcário	Extra calcário Fornecedor Belocal 26.03.2015	03/08/2015	CRONOLAB	04/08/2015	N/D	13756/2015
Ingredientes	Calcário	Extra calcário Fornecedor Belocal 27.01.2015	03/08/2015	CRONOLAB	04/08/2015	N/D	13703/2015
Ingredientes	Calcário	Extra calcário Fornecedor Belocal 27.03.2015	03/08/2015	CRONOLAB	04/08/2015	N/D	13757/2015

INVESTIGATION OF THE CAUSES:

None of the Dioxins analysis results have shown contamination in **PHOSPHATE** used as an ingredient in animal feed, so this hypothesis was excluded.

Etapa	Descrição	Amostra	Data da amostra/coleta	Laboratório	Data de envio	Resultados (ng OMS-TEQ/kg)	Nº do laudo
Ingredientes	Fosfato	EXTRA Fosfato - Fornecedor Yara - 21.04.2015	03/08/2015	CRONOLAB	04/08/2015	N/D	13709/2015
Ingredientes	Fosfato	Fosfato - Fornecedor Vale 02.03.2015 - 3X0	03/08/2015	CRONOLAB	04/08/2015	N/D	13760/2015
Ingredientes	Fosfato	Fosfato - Fornecedor Vale 17.03.2015 - 2X0	03/08/2015	CRONOLAB	04/08/2015	N/D	13762/2015
Ingredientes	Fosfato	Fosfato - Fornecedor Vale 20.03.2015 - 2X0	03/08/2015	CRONOLAB	04/08/2015	N/D	13763/2015
Ingredientes	Fosfato	Fosfato - Fornecedor Vale 23.03.2015 - 3X0	03/08/2015	CRONOLAB	04/08/2015	N/D	13764/2015
Ingredientes	Fosfato	Fosfato - Fornecedor Vale 26.02.2015 - 2X0	03/08/2015	CRONOLAB	04/08/2015	N/D	13759/2015
Ingredientes	Fosfato	Fosfato - Fornecedor Vale 27.02.2015 - 4X0	03/08/2015	CRONOLAB	04/08/2015	N/D	13761/2015
Ingredientes	Fosfato	Fosfato Vale 25.03.2015 - 2X0	03/08/2015	CRONOLAB	04/08/2015	N/D	13765/2015
Ingredientes	Fosfato	Fosfato Vale Fab.: 24/02/15/ 3x0 Data de receb: 26/02/15	03/08/2015	CRONOLAB	04/08/2015	N/D	13758/2015
Ingredientes	Fosfato	Fosfato Vale.Fab.:24/02/15 3x0. NF: 262433	03/08/2015	CRONOLAB	04/08/2015	N/D	13707/2015
Ingredientes	Fosfato	Fosfato Vale/ Fab.: 02/03/15/ 3x0. Data de recebimento: 05/03/15	03/08/2015	CRONOLAB	04/08/2015	N/D	13708/2015

INVESTIGATION OF THE CAUSES:

None of the Dioxins analysis results have shown contamination in **MINERAL BLEND** used as an ingredient in animal feed, so this hypothesis was excluded.

Etapa	Descrição	Amostra	Data da amostra/coleta	Laboratório	Data de envio	Resultados (ng OMS-TEQ/kg)	Nº do laudo
Ingredientes	Px mineral	Mineral Aves - pool fevereiro (03,06,11 e 17/02/2015)	30/07/2015	CRONOLAB	31/07/2015	N/D	13586/2015
Ingredientes	Px mineral	Mineral Aves - pool janeiro (30.12.2014, 09,14,16 e 22/01/2015)	30/07/2015	CRONOLAB	31/07/2015	N/D	13585/2015
Ingredientes	Px mineral	Mineral Aves 02.03.2015	02/08/2015	CRONOLAB	03/08/2015	N/D	13933/2015
Ingredientes	Px mineral	Mineral Aves 03.02.2015	02/08/2015	CRONOLAB	03/08/2015	N/D	13713/2015
Ingredientes	Px mineral	Mineral Aves 06.02.2015	02/08/2015	CRONOLAB	03/08/2015	N/D	13711/2015
Ingredientes	Px mineral	Mineral Aves 06.03.2015	02/08/2015	CRONOLAB	03/08/2015	N/D	13931/2015
Ingredientes	Px mineral	Mineral Aves 07.03.2015	02/08/2015	CRONOLAB	03/08/2015	N/D	13930/2015
Ingredientes	Px mineral	Mineral Aves 09.01.2015	02/08/2015	CRONOLAB	03/08/2015	N/D	13717/2015
Ingredientes	Px mineral	Mineral Aves 10.03.2015	02/08/2015	CRONOLAB	03/08/2015	N/D	13932/2015
Ingredientes	Px mineral	Mineral Aves 11.02.2015	02/08/2015	CRONOLAB	03/08/2015	N/D	13710/2015
Ingredientes	Px mineral	Mineral Aves 14.01.2015	02/08/2015	CRONOLAB	03/08/2015	N/D	13715/2015
Ingredientes	Px mineral	Mineral Aves 16.01.2015	02/08/2015	CRONOLAB	03/08/2015	N/D	13716/2015
Ingredientes	Px mineral	Mineral Aves 17.02.2015	02/08/2015	CRONOLAB	03/08/2015	N/D	13712/2015
Ingredientes	Px mineral	Mineral Aves 22.01.2015	02/08/2015	CRONOLAB	03/08/2015	N/D	13714/2015
Ingredientes	Px mineral	Mineral Aves 30.12.2014	02/08/2015	CRONOLAB	03/08/2015	N/D	13718/2015
Ingredientes	Px mineral	Iodato de Cálcio - pool (012-047/15, 012-049/15, 012-056/15, 012-065/15)	02/08/2015	CRONOLAB	03/08/2015	N/D	13719/2015
Ingredientes	Px mineral	Selenito de Sódio - pool (53469, 53946)	02/08/2015	CRONOLAB	03/08/2015	N/D	13720/2015
Ingredientes	Px mineral	Sulfato de cobre 03/15	02/08/2015	CRONOLAB	03/08/2015	N/D	13736/2015
Ingredientes	Px mineral	Sulfato de cobre 04/15	02/08/2015	CRONOLAB	03/08/2015	N/D	13734/2015
Ingredientes	Px mineral	Sulfato de cobre 05/15	02/08/2015	CRONOLAB	03/08/2015	N/D	13735/2015
Ingredientes	Px mineral	Sulfato de cobre 06/15	02/08/2015	CRONOLAB	03/08/2015	N/D	13737/2015
Ingredientes	Px mineral	Sulfato de cobre 07/15	02/08/2015	CRONOLAB	03/08/2015	N/D	13733/2015
Ingredientes	Px mineral	Sulfato de cobre 47/14	02/08/2015	CRONOLAB	03/08/2015	N/D	13731/2015
Ingredientes	Px mineral	Sulfato de cobre 48/14	02/08/2015	CRONOLAB	03/08/2015	N/D	13730/2015
Ingredientes	Px mineral	Sulfato de cobre 50/14	02/08/2015	CRONOLAB	03/08/2015	N/D	13729/2015
Ingredientes	Px mineral	Sulfato de cobre 51/14	02/08/2015	CRONOLAB	03/08/2015	N/D	13732/2015
Ingredientes	Px mineral	Sulfato de ferro - pool (02.52/14, 02.02/15, 02.47/14, 02.50/14)	02/08/2015	CRONOLAB	03/08/2015	N/D	13728/2015
Ingredientes	Px mineral	Sulfato de manganês - pool (171214, 221114, 90115, 210115, 190115, 40115, 81214)	02/08/2015	CRONOLAB	03/08/2015	N/D	13727/2015
Ingredientes	Px mineral	Sulfato de zinco 02/15	02/08/2015	CRONOLAB	03/08/2015	N/D	13722/2015
Ingredientes	Px mineral	Sulfato de zinco 04/15	02/08/2015	CRONOLAB	03/08/2015	N/D	13723/2015
Ingredientes	Px mineral	Sulfato de zinco 05/15	02/08/2015	CRONOLAB	03/08/2015	N/D	13724/2015
Ingredientes	Px mineral	Sulfato de zinco 07/15	02/08/2015	CRONOLAB	03/08/2015	N/D	13725/2015
Ingredientes	Px mineral	Sulfato de zinco 52/14	02/08/2015	CRONOLAB	03/08/2015	N/D	13726/2015
Ingredientes	Px mineral	Sulfato de zinco 53/14	02/08/2015	CRONOLAB	03/08/2015	N/D	13721/2015

INVESTIGATION OF THE CAUSES:

None of the Dioxins analysis results have shown contamination in **VITAMIN BLEND** used as an ingredient in animal feed, so this hypothesis was excluded.

Etapa	Descrição	Amostra	Data da amostra/coleta	Laboratório	Data de envio	Resultados (ng OMS-TEQ/kg)	Nº do laudo
Ingredientes	Px vitamínico	PX 240 FP11 POOL Fev/15 (10/02 e 24/02)	30/07/2015	CRONOLAB	31/07/2015	N/D	13588/2015
Ingredientes	Px vitamínico	PX 240 FP11 POOL jan/15 (14/01 e 27/01)	30/07/2015	CRONOLAB	31/07/2015	N/D	13587/2015
Ingredientes	Px vitamínico	PX 240 FP18 - POOL Fev/15 (02/02 e 16/02)	30/07/2015	CRONOLAB	31/07/2015	N/D	13592/2015
Ingredientes	Px vitamínico	PX240 FP14 - POOL Fev/15 (06/02; 12/02; 20/02; 25/02)	30/07/2015	CRONOLAB	31/07/2015	N/D	13590/2015
Ingredientes	Px vitamínico	PX240 FP14 - POOL jan/15 (10/01; 15/01; 19/01; 28/01)	30/07/2015	CRONOLAB	31/07/2015	N/D	13589/2015
Ingredientes	Px vitamínico	PX240 FP14 - POOL Mar/15 (07/03; 13/03; 20/03; 21/03)	02/08/2015	CRONOLAB	03/08/2015	0,004	13699/2015
Ingredientes	Px vitamínico	Premix Vitamínico 240FP11 (01/03)	02/08/2015	CRONOLAB	03/08/2015	N/D	13698/2015
Ingredientes	Px vitamínico	Premix Vitamínico 240FP18	02/08/2015	CRONOLAB	03/08/2015	N/D	13700/2015
Ingredientes	Px vitamínico	PX 240 FP18 - POOL Mar/15 (04/03 e 17/03)	02/08/2015	CRONOLAB	03/08/2015	N/D	13591/2015
Ingredientes	Px vitamínico	Vitamina E - pool (201406148, 201403260, 201410102, 201407061)	02/08/2015	CRONOLAB	03/08/2015	N/D	13929/2015

INVESTIGATION OF THE CAUSES:

The Dioxins analysis results for macro ingredients used in animal feed, showed contamination in **FEATHER MEAL** used as ingredient in swine feed.

Etapa	Descrição	Amostra	Data da amostra/coleta	Laboratório	Data de envio	Resultados (ng OMS-TEQ/kg)	Nº do laudo
Ingredientes	Milho	Milho	30/07/2015	CRONOLAB	30/07/2015	N/D	13624/2015
Ingredientes	Farelo de soja	Farelo de soja	30/07/2015	CRONOLAB	30/07/2015	N/D	13625/2015
Ingredientes	Farinha Animal	Farinha de pena	30/07/2015	CRONOLAB	30/07/2015	6,640	13634/2015
Ingredientes	Farinha Animal	Farinha de vísceras de aves	30/07/2015	CRONOLAB	30/07/2015	N/D	13635/2015
Ingredientes	Gordura animal	Gordura de aves	30/07/2015	CRONOLAB	30/07/2015	N/D	13614/2015

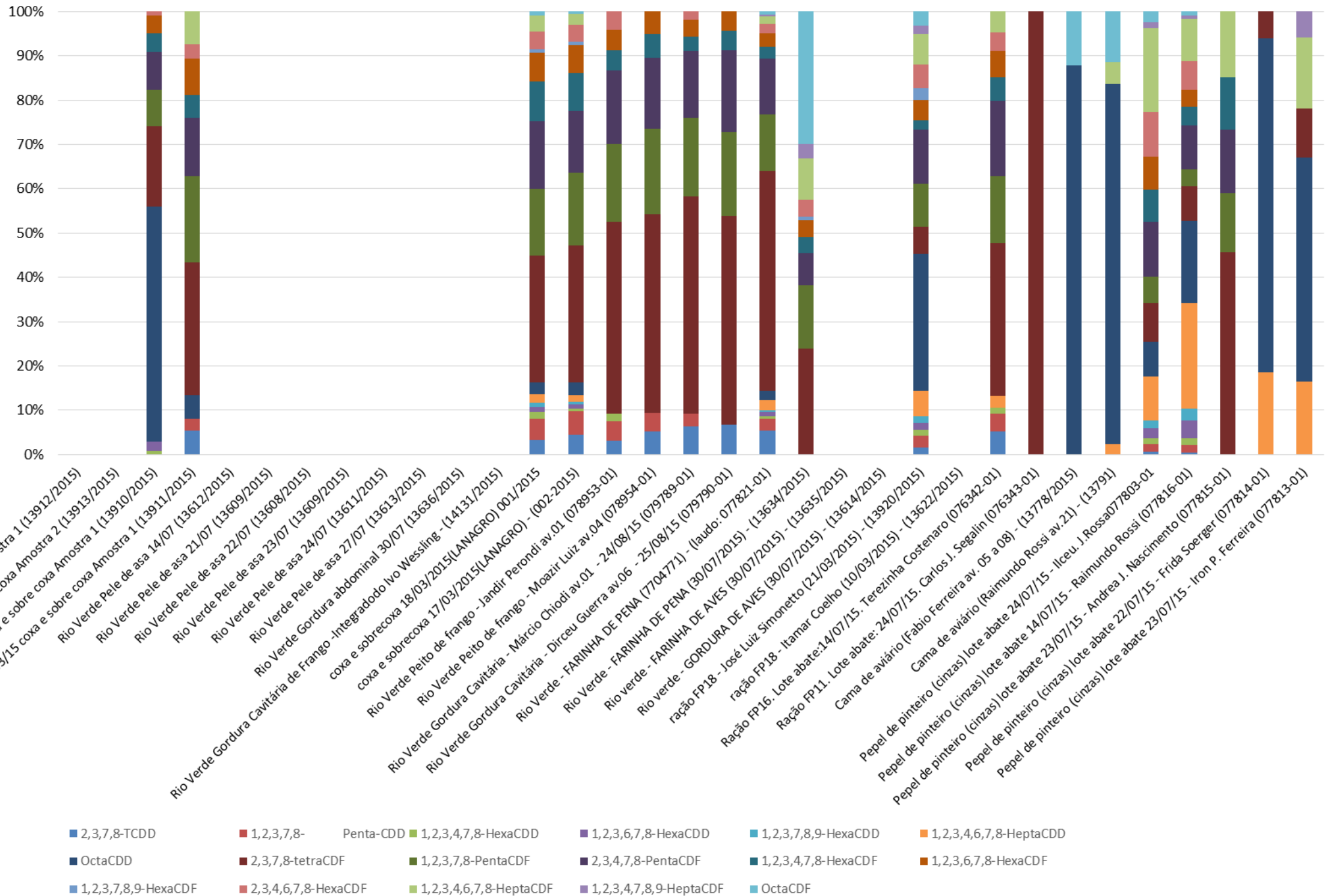
Fonte Primária de Contaminação	Unidade	Amostra	Data da amostra / coleta	Local enviado	Data de envio	Resultados (ng OMS-TEQ/kg)		no.do laudo
						Lower bound	Upper bound	
Produto Final - Ração	Rio Verde	Ração FP16 Abate 14/07/15, Terezinha Costenaro-pedido 15086586,	14/08/2015	Eurofins	15/08/2015	0,3920	0,4010	076342-01
Produto Final - Ração	Rio Verde	Ração FP11 Abate 24/07/15, Carlos Segalin- pedido 15109992,	14/08/2015	Eurofins	15/08/2015	0,0052	0,0706	076343-01
Fábrica de ração - Contaminação da Farinha de Origem Animal	Rio Verde	Farinha de Pena (7704771)	18/08/2015	Eurofins	19/08/2015	5,21	5,22	077821-01
Produto Final - Ração	Rio Verde	Ração Post II - A-119 - SGE04007 - Pedido 14656814	18/08/2015	Eurofins	19/08/2015	N/D	0,0659	079225-01
Produto Final - Ração	Rio Verde	Ração Post I - A-04 - SGE 03008 - Pedido 14898512	18/08/2015	Eurofins	19/08/2015	0,0064	0,0713	079227-01
Produto Final - Ração	Rio Verde	Ração Pré post - A-14 - SGE 01008 - Pedido 15182845	18/08/2015	Eurofins	19/08/2015	N/D	0,0669	079226-01

INVESTIGATION OF THE CAUSES:

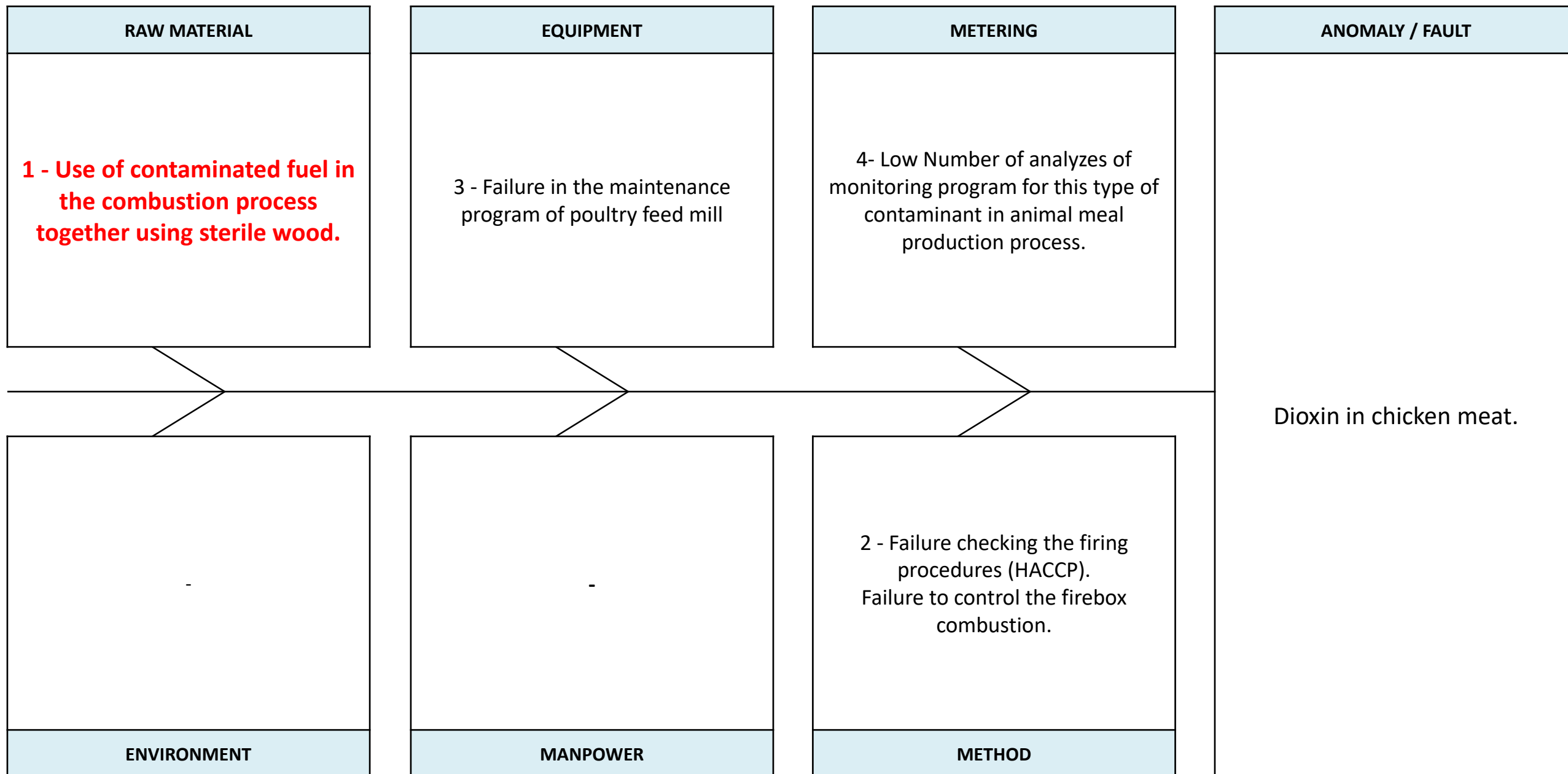
None of the Dioxins analysis results have shown contamination in **FEED**.

Etapa	Descrição	Amostra	Data da amostra/coleta	Laboratório	Data de envio	Resultados (ng OMS-TEQ/kg)	Nº do laudo
Ração	Ração crescimento	Ração FP14 - Itamar Coelho - 20/02/15 (OOA 4085)	30/07/2015	CRONO LAB	30/07/2015	N/D	16631/2015
Ração	Ração crescimento	Ração FP14 - Itamar Coelho - 21/02/15 (NWH 4814)	30/07/2015	CRONO LAB	30/07/2015	N/D	16632/2015
Ração	Ração crescimento	Ração FP16 - Itamar Coelho - 03/03/15 (OMW 1112)	30/07/2015	CRONO LAB	30/07/2015	N/D	13621/2015
Ração	Ração crescimento	Ração FP16 - Itamar Coelho - 03/03/15 (OMW 1112)	30/07/2015	CRONO LAB	30/07/2015	N/D	13620/2015
Ração	Ração crescimento	Ração FP16 - Itamar Coelho - 03/03/15 (OMW 1112)	30/07/2015	CRONO LAB	30/07/2015	N/D	13623/2015
Ração	Ração crescimento	Ração FP16 - Itamar Coelho - 04/03/15 (NLC 2098)	30/07/2015	CRONO LAB	30/07/2015	N/D	13619/2015
Ração	Ração crescimento	Ração FP16 - Itamar Coelho - 04/03/15 (NLC 2098)	30/07/2015	CRONO LAB	30/07/2015	N/D	13619/2015
Ração	Ração crescimento	Ração FP16 - Itamar Coelho - 09/03/15 (NWH 4854)	30/07/2015	CRONO LAB	30/07/2015	N/D	13618/2015
Ração	Ração crescimento	Ração FP16 - Itamar Coelho - 27/02/15 (NCY 5288)	30/07/2015	CRONO LAB	30/07/2015	N/D	13620/2015
Ração	Ração final	Ração FP18 - Itamar Coelho - 10/03/15 (ONU 8008)	30/07/2015	CRONO LAB	30/07/2015	N/D	13622/2015
Ração	Ração final	Ração FP 18 - José Luiz Simonetto - 21/03/15 - OGI 1013	03/08/2015	CRONO LAB	04/08/2015	0,360	13920/2015
Ração	Ração final	Ração FP 18 - Rodrigo (Sete Léguas) - 23/03/15 - OGI 1013	03/08/2015	CRONO LAB	04/08/2015	N/D	13918/2015
Ração	Ração inicial	Ração FP 12 - Idelton Mesquita - 09/02/15 - ONV 6653	03/08/2015	CRONO LAB	04/08/2015	N/D	13917/2015
Ração	Ração pré inicial	Ração FP 11 - Idelton Mesquita - 08/02/15 - OGR 8015	03/08/2015	CRONO LAB	04/08/2015	N/D	13916/2015
Ração	Ração pré inicial	Ração FP 11 - José Luiz Simonetto - 12/02/15 - OMN 8904	03/08/2015	CRONO LAB	04/08/2015	N/D	13924/2015
Ração	Ração pré inicial	Ração FP 11 - Rodrigo (Sete Léguas) - 14/02/15 - NWO 8066	03/08/2015	CRONO LAB	04/08/2015	N/D	13919/2015

GRAPHICAL ANALYSIS OF THE CONGENERERS:



INVESTIGATION OF THE CAUSES:



INVESTIGATION OF THE MAIS CAUSE:

***Contaminated fuel in the combustion process with sterile wood used in manufacturing process of FEATHER MEAL.**

Drying process of feather meal after hydrolysis:

- Feathers are hydrolyzed at 150°C and 4 kgf / cm²;
- Discharge from the Digester in the percolator with humidity about 50%;
- Rotatory valve dosing flour (feather meal?) with the heated air temperature between 250 and 400 °C;
- Into the cyclone the drying process reduces humidity from 50% to 6%;
- After moisture loss, the density of the product decreases and it is transported to the separation in Cyclone.
- Flour is separated from the heated air, and transported to the storage silo;
- Stored flour is transported by truck to the hopper 2 Factory 1 (if cases of contingency) and factory 2 to produce feed for pigs.

INVESTIGATION OF MAIN CAUSE

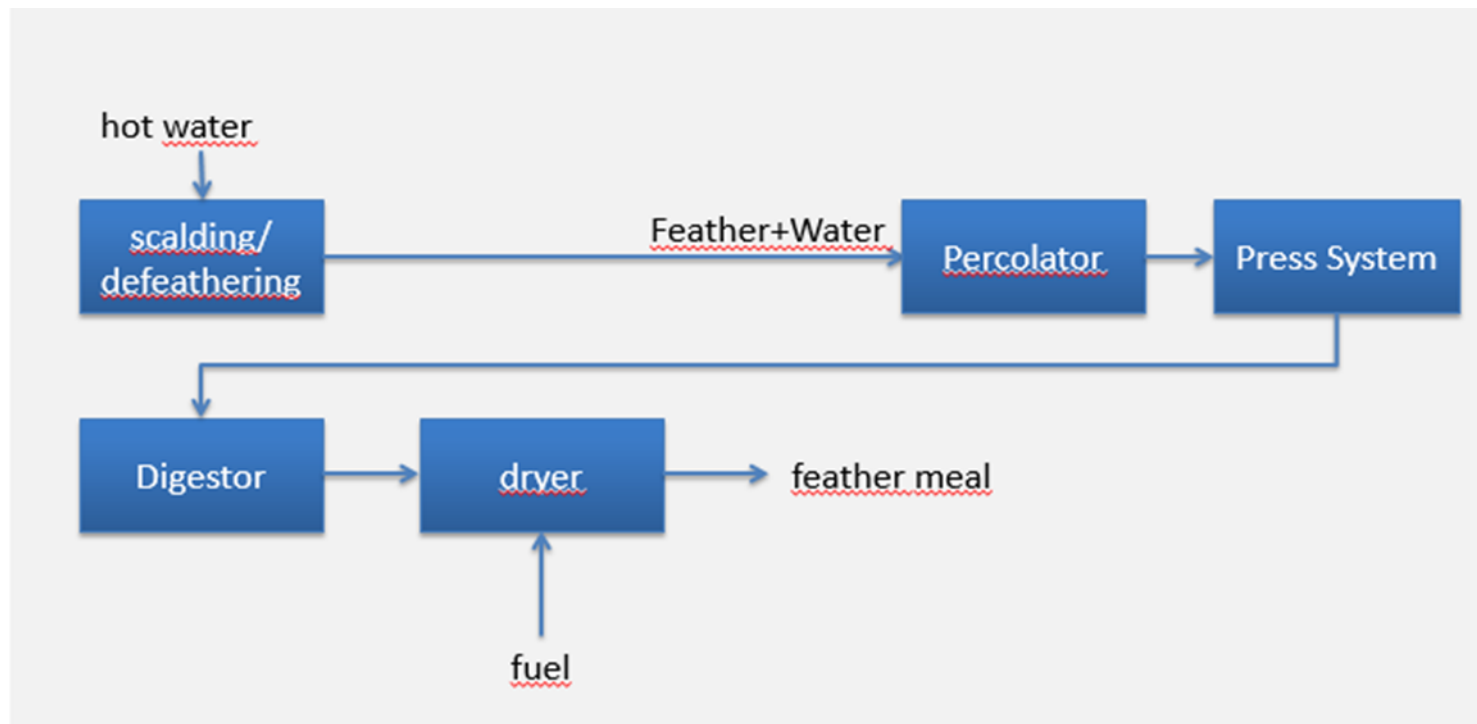
1 - Contaminated fuel in the combustion process together using sterile wood.

Fuel used in unsuitable process (contaminated).

Burning of fuel with the potential to generate dioxins.

Burning of used pallets disposed of treated wood, used for drying feathers.

Method of drying feathers by direct heat.



INVESTIGATION OF MAIN CAUSE

1 - Contaminated fuel in the combustion process together using sterile wood.

Drying Process

Drying of feather meal is made by direct action of heat from the furnace. It was reported that at the beginning of September began to use only eucalyptus wood for drying and no longer used wooden pallets. On the day of the visit the temperature sensor we use measured above 500 °C in the furnace, which came to 200 °C in the previous pipe to feather flour mixer and then to the mixer pipe temperature was 212 ° C. After cooling the two cyclones temperature was 55 ° C and was being stored in the silo mouth to 46.5 ° C.

The appearance of feather meal shown in Figure 10, clearly

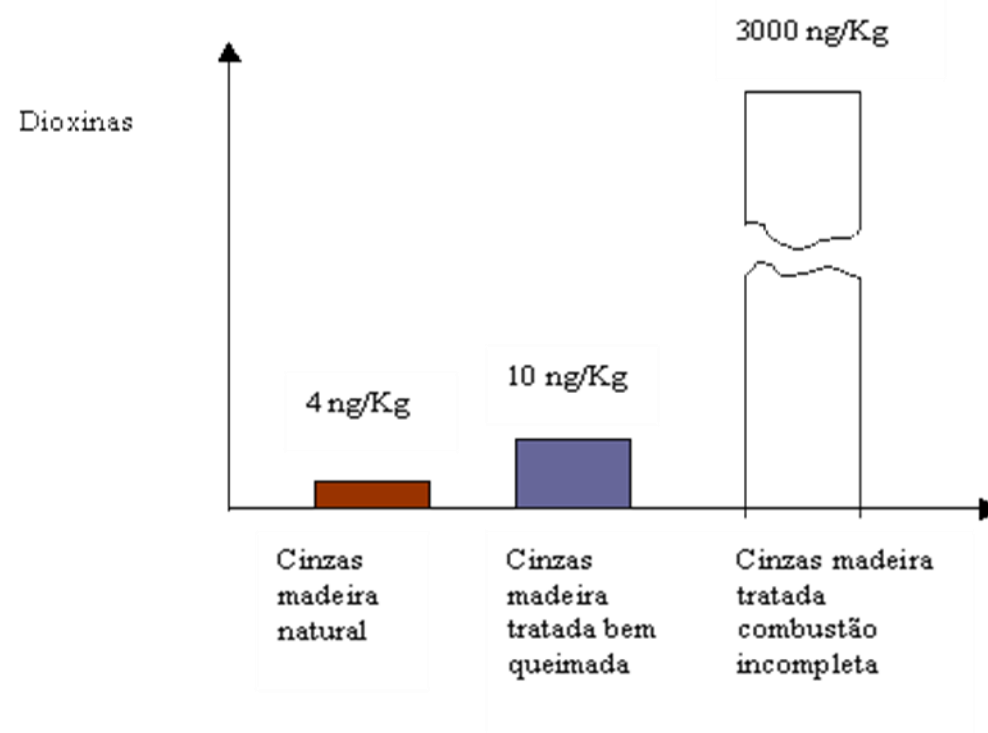
It shows the presence of smoke in the flour collected on 8/19/15 and is looking clearer in collecting 09/01/15.



INVESTIGATION OF MAIN CAUSE

1 - Contaminated fuel in the combustion process together using sterile wood.

Incomplete combustion, very common in the common bonfires, we find pieces of carbonized wood, incompletely consumed produces huge quantities of dioxin that are accumulated in the ashes, as verified by a state laboratory Swiss.



INVESTIGATION OF MAIN CAUSE

1 - Contaminated fuel in the combustion process together using sterile wood.

Action implement October 2015

1. Replacement of the pallet by burning 100% wood biomass. On August 30, 2015



2. Cleaning and test all the system with new parameters during September 2015.
3. Stop the production the feather meal in October 13, because the process didn't establish.

INVESTIGATION OF OTHER CAUSES



2 - Failure checking the firing procedures (HACCP). Failure to control the firebox combustion

Furnace gas temperature: avoid ranges between 275-375 ° C and 550-650 ° C - In the previous point to the power of the flour to dry the temperature should not exceed 250 ° C

CO at the exit of the combustion gases (without mixing with clean air): <250 ppm

O2 Excess: minimum 12% and maximum 18% of the stoichiometric ratio

REFERENCES USED:

- CODEX ALIMENTARIUS (WHO, FAO), International Food Standards: DIOXIN AND DIOXIN-LIKE PCB CONTAMINATION IN FOODS AND FEEDS (CAC/RCP 62-2006).
- Environment Australia (1999), Incineration and Dioxins: Review of Formation Processes, consultancy report prepared by Environmental and Safety Services for Environment Australia, Commonwealth Department of the Environment and Heritage, Canberra.
- UNEP - UNITED NATIONS ENVIRONMENT PROGRAMME, 2005: Standardized Toolkit for Identification and Quantification of Dioxin and Furan Releases: Air; Water; Land; Products; Residues - Edition 2.1 (December 2005). Verificado em 18/04/2016 em: http://www.pops.int/documents/guidance/toolkit/ver2_1/Toolkit-2005_2-1_en.pdf
- WHO (World Health Organization), 2010 - PREVENTING DISEASE THROUGH HEALTHY ENVIRONMENTS: EXPOSURE TO DIOXINS AND DIOXIN-LIKE SUBSTANCES: A MAJOR PUBLIC HEALTH CONCERN.
- EMISSION FACTOR DOCUMENTATION FOR AP-42 SECTION 2.1, REFUSE COMBUSTION. Office of Air Quality Planning and Standards Office of Air and Radiation U.S. Environmental Protection Agency Research Triangle Park, North Carolina 27711 May 1993. Verificado em 04/3/2016 em: <http://www3.epa.gov/ttnchie1/ap42/ch02/bgdocs/b02s01.pdf>
- ALENCAR JUNIOR, N. R. . Incineração e Dioxinas: Análise do Aporte Teórico disponível. In: Encontro Nacional de Engenharia de Produção, 2002, Salvador. Encontro Nacional de Engenharia de Produção. Salvador, 2002.
- EMISSION FACTOR DOCUMENTATION FOR AP-42 SECTION 2.1, REFUSE COMBUSTION. Office of Air Quality Planning and Standards Office of Air and Radiation - U.S. Environmental Protection Agency Research, Triangle Park, North Carolina 27711 May 1993. Disponível em: <https://www3.epa.gov/ttnchie1/ap42/ch01/bgdocs/b01s11.pdf> verificado em: 01/04/2016.
- Rigo, H. Gregor. Dioxin Surrogates-Are There Any Meaningful Ones?. No. CONF-970440--.. Solid Waste Association of North America, Silver Spring, MD (United States); Air and Waste Management Association, Pittsburgh, PA (United States); Integrated Waste Services Association, Washington, DC (United States); National Renewable Energy Lab., Golden, CO (United States); American Society of Mechanical Engineers, Yonkers, NY (United States). Solid Waste Processing Div.; Environmental Protection Agency, Research Triangle Park, NC (United States). Air Pollution Technology Branch, 1997. Verificado em 01/04/2016 em: <http://www.seas.columbia.edu/earth/wtert/sofos/nawtec/nawtec05/nawtec05-25.pdf>

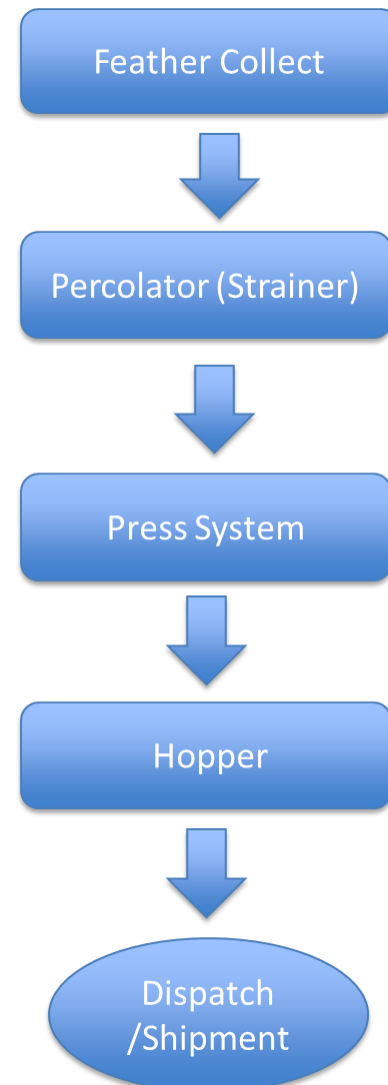
INVESTIGATION OF OTHER CAUSES



2 - Failure checking the firing procedures (HACCP). Failure to control the firebox combustion

1. Stop the production the feather meal in October 13, because the process didn't establish, boiler system the Rio Verde don't have control flow wood.

FLOWCHART OF FEATHER PROCESS



INVESTIGATION OF OTHER CAUSES



3 - Failure in the maintenance program of poultry feed mill

Contamination at the plant 1 that produces feed for feeding chickens with feather meal used in the production of feed for pigs, causing cross contamination in chicken feed.

INVESTIGATION OF OTHER CAUSES

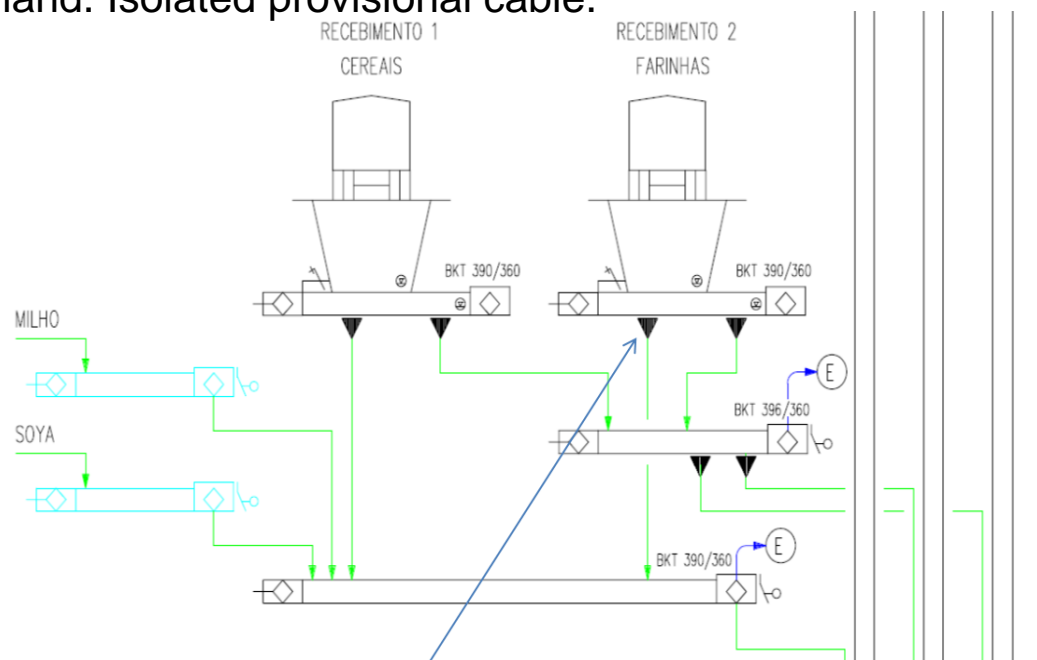
3 - Failure in the maintenance program of poultry feed mill

- 27 January 2015 → E01B05 drawer failed, on January 28, 2015,

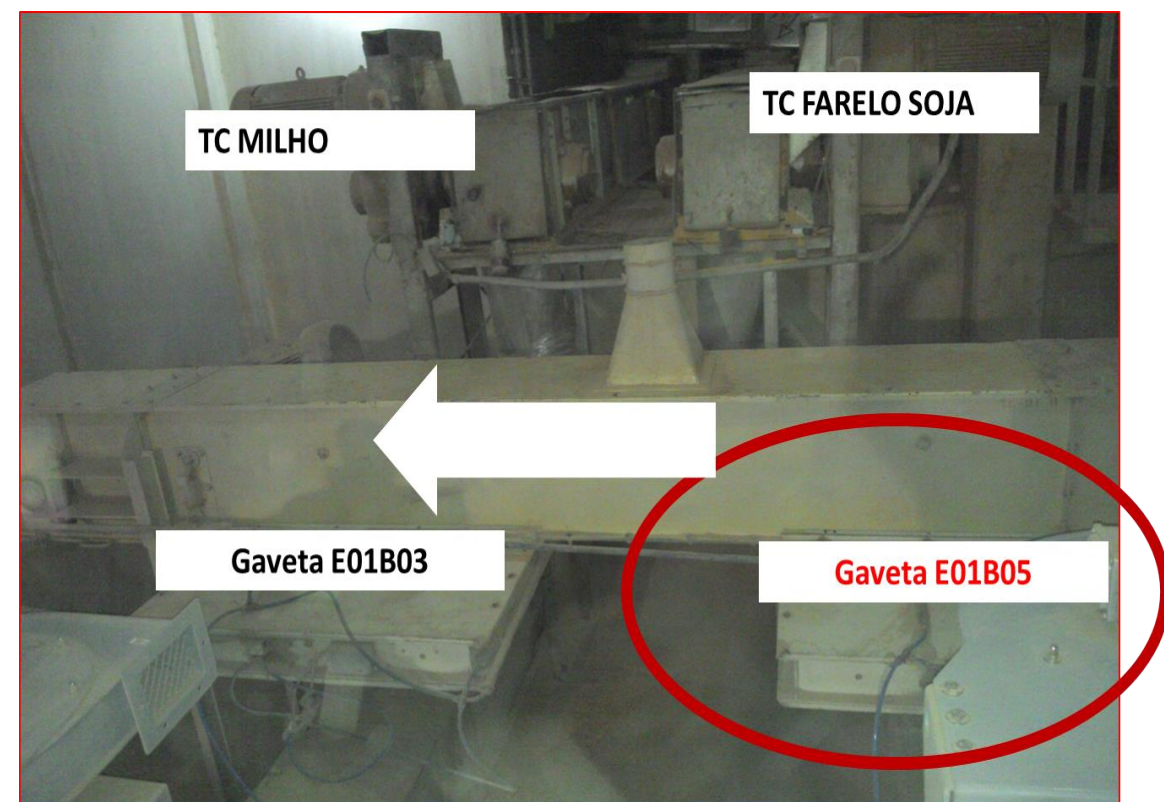
No mechanical problem was detected in the drawer; position sensor was activated and manually closed, failure was solved.

- 27 June 2015. Failure E01B05 drawer fails to July 28

Mechanical problem detected in the drawer, the pneumatic valve actuation of E01B05 drawer and broken sensors at the junction of the cable beds control cable, generating bad contact in the system and drive independent drawer automation command. Isolated provisional cable.



Gaveta E01B05 do redler retirada da moega 2, pode alimentar o redler farelo soja e milho.



INVESTIGATION OF OTHER CAUSES

3 - Failure in the maintenance program of poultry feed mill

1. Electrical cable exchange (contingency action) on the date of September 2 and removed from the drawer (final action) on the date of 29 September.
2. Implement maintenance plan in October 2015.



INVESTIGATION OF OTHER CAUSES



4 - Low Number of analyzes of monitoring program for this type of contaminant in animal meal production process.

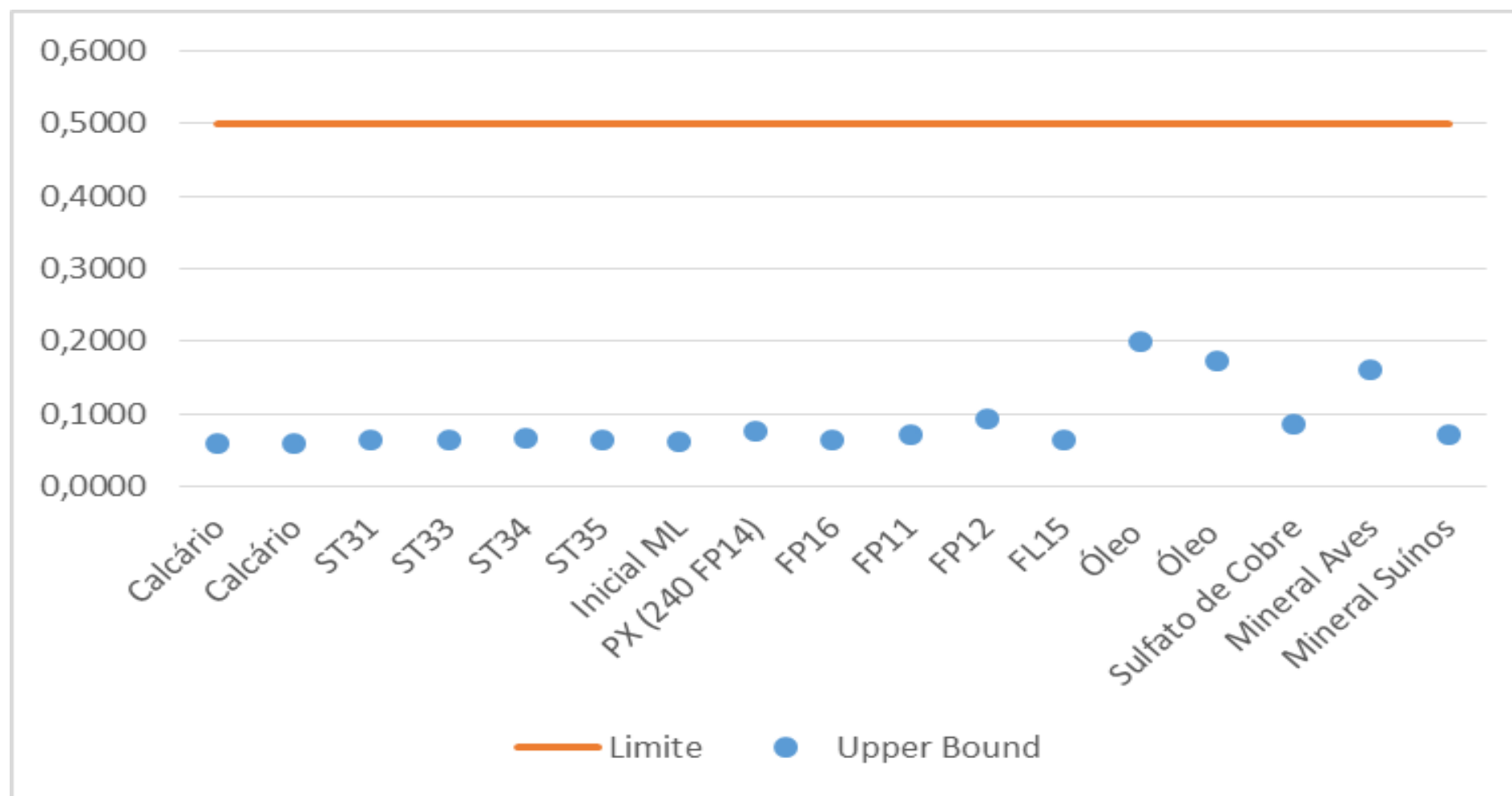
PLANO	
Feed Chicken, Turkey and Pork (Growth or Final)	1 / tw o months / species
Feed Reproducers (Chicken, Turkey and Pork)	1 / Yearly / species
Soybean hulls	01 / provider / half
Limestone Thin	01 / provider / half
Limestone Thik	01 / provider/ half
Kaolin	01 / provider / half
DDGS (concentrate Protein)	01 /provider / Yearly
Adsorbent of Mycotoxins	01 / provider / half
Soybean Meal	01 / provider / tw o months
Precooked Cornmeal	01 / provider / Yearly
Phosphate	01/ providerr / half
Corn Gluten Meal	01/ provider / Yearly
Other Sharps of Vegetal	01 / provider / tw o months
Yeast Cana	01 / provider / Yearly
Corn	01 / provider / tw o months
Degummed oil	01 / provider / tw o months
Oil Acid	01 / provider / tw o months
Sulphate and Zinc Oxide	01 / provider / tw o months
Blood Plasma	01 / provider / Yearly
Núcleos Lácteos	01/ provider / tw o months
Sorghum	01 / provider / tw o months
Other Cereals	01 / provider / tw o months
Copper Sulfate	01 / provider/ tw o months
Off Soy	01 / provider / half
Premix Vitamínico Mineral	01 / species / half
Ferrous Sulfate	01 / provider / tw o months
Manganese Sulfate	01 / provider / tw o months
Rice Husk Bran	01 / provider/ tw o months

INVESTIGATION OF OTHER CAUSES



4 - Low Number of analyzes of monitoring program for this type of contaminant in animal meal production process.

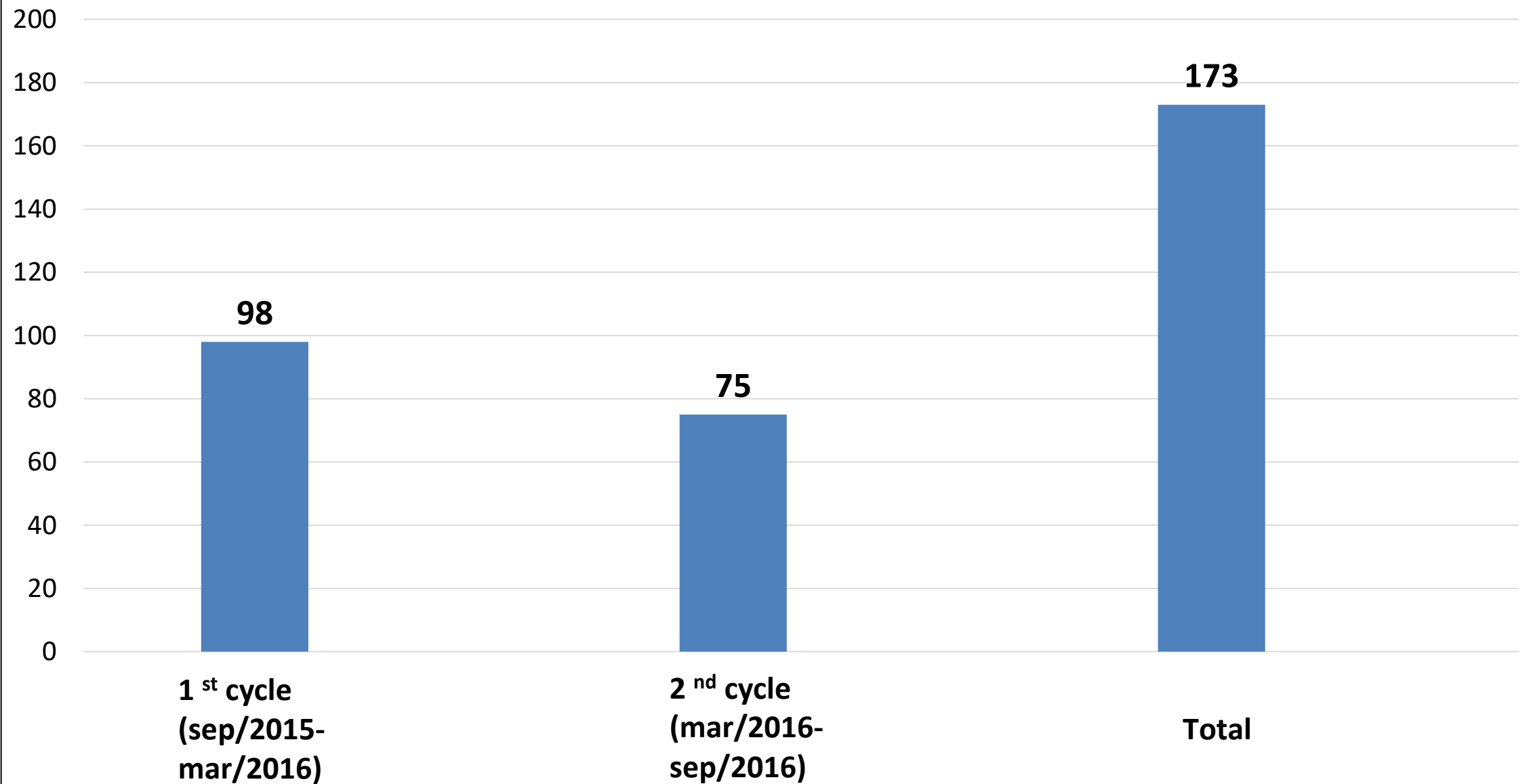
Action implement: December



Rio Verde: Compliance to 'Circular 32/2015'



Rio Verde - Abdominal fat



Amostra	Data da amostra / coleta	Local enviado	Data de envio	Resultados (ng OMS-TEQ/kg)		no.do laudo
				Lower bound	Upper bound	
Gordura cavitária de frango - Mauro Cardozo, av. 04, pedido 16231868 - 21/03/16	21/03/2016	Eurofins	30/03/2016	0,0185	0,282	37581-01
Gordura cavitária de frango - Raimundo de Rossi, av. 31, pedido 16232133 - 21/03/16	21/03/2016	Eurofins	30/03/2016	0,020	0,278	37582-01
Gordura cavitária de frango - Katiussa Kroth, av. 03, pedido 16232142 - 21/03/16	21/03/2016	Eurofins	30/03/2016	0,0232	0,291	37583-01
Gordura cavitária de frango - Flavio de Oliveira, av. 01, pedido 16232148 - 21/03/16	21/03/2016	Eurofins	30/03/2016	0,0195	0,305	37584-01
Gordura cavitária de frango - Osvaldo Soeger, av. 05, pedido 16232158 - 21/03/16	21/03/2016	Eurofins	30/03/2016	0,0204	0,326	39409-01
Gordura cavitária de frango - Sebastião Veloso, av. 03, pedido 16295325 - 04/04/16	04/04/2016	Eurofins	13/06/2016	0,169	0,326	63906-01
Gordura cavitária de frango - Tayrone Cruvinel, av. 05, pedido 16295922 - 04/04/16	04/04/2016	Eurofins	13/06/2016	0,17	0,333	63907-01
Gordura cavitária de frango - Carlos Segalin, av. 02, pedido 16259928 - 04/04/16	04/04/2016	Eurofins	13/06/2016	0,168	0,34	63908-01
Gordura cavitária de frango - Jovair Fernandes, av. 01, pedido 16328160 - 09/04/16	09/04/2016	Eurofins	13/06/2016	0,175	0,324	63909-01
Gordura cavitária de frango - Antonio Peretti, av. 06, pedido 16328158 - 09/04/16	09/04/2016	Eurofins	13/06/2016	0,0377	0,293	63910-01
Gordura cavitária de frango - Jairo Jacinto, av. 02, pedido 16501435 - 19/05/16	19/05/2016	Eurofins	13/06/2016	0,0379	0,316	63911-01
Gordura cavitária de frango - Jairo Jacinto, av. 05, pedido 16504729 - 19/05/16	19/05/2016	Eurofins	13/06/2016	0,0366	0,299	63912-01
Gordura cavitária de frango - Jose Gonçalves, av. 04, pedido 19501351 - 19/05/16	19/05/2016	Eurofins	13/06/2016	0,0347	0,294	63913-01
Gordura cavitária de frango - Sandro Borges, av. 03, pedido 16501451 - 19/05/16	19/05/2016	Eurofins	13/06/2016	0,0399	0,36	63914-01
Gordura cavitária de frango - Valeriano Vieira, av. 04, pedido 16504806 - 20/05/16	20/05/2016	Eurofins	13/06/2016	0,0349	0,298	63915-01
Gordura cavitária de frango - Jandir Perondi, av. 08, pedido 16504760 - 20/05/16	20/05/2016	Eurofins	13/06/2016	0,0348	0,29	63916-01
Gordura cavitária de frango - Ailton Gelini, av. 02, pedido 16504481 - 21/05/16	21/05/2016	Eurofins	13/06/2016	0,0337	0,295	63917-01
Gordura cavitária de frango - Rodrigo Marcon, av. 08, pedido 16504723 - 21/05/16	21/05/2016	Eurofins	13/06/2016	0,0322	0,334	63183-01
Gordura cavitária de frango - Leisimar Ferreira, av. 04, pedido 16504787 - 21/05/16	21/05/2016	Eurofins	13/06/2016	0,0353	0,312	63184-01
Gordura cavitária de frango - Dirceu Guerra, av. 05, pedido 16532701 - 24/05/16	24/05/2016	Eurofins	13/06/2016	0,0497	0,32	63185-01
Gordura cavitária de frango - Luci Terezinha, av. 03, pedido 16504792 - 24/05/16	24/05/2016	Eurofins	13/06/2016	0,0347	0,062	63186-01
Gordura cavitária de frango - Marcio Chiodi, av. 10, pedido 16535329 - 26/05/16	26/05/2016	Eurofins	13/06/2016	0,0379	0,3	63187-02
Gordura cavitária de frango - Balduino Lopes, av. 05, pedido 16504547 - 26/05/16	26/05/2016	Eurofins	13/06/2016	0,124	0,354	63188-01
Gordura cavitária de frango - Jairo Jacinto, av. 16, pedido 16504750 - 26/05/16	26/05/2016	Eurofins	13/06/2016	0,0477	0,314	63189-01
Gordura cavitária de frango - Balduino Lopes, av. 85, pedido 16504547 - 27/05/16	27/05/2016	Eurofins	13/06/2016	0,0385	0,306	63190-01
Gordura cavitária de frango - Alfonso Falchetti, av. 01, pedido 16504714 - 27/05/16	27/05/2016	Eurofins	13/06/2016	0,0325	0,323	63191-01

MINISTRY OF AGRICULTURE, LIVESTOCK AND FOOD SUPPLY

SECRETARIAT OF ANIMAL AND PLANT HEALTH - SDA

Ministry of Agriculture, Livestock and Food Supply - Bairro Zona Cívico-Administrativa - DF, CEP
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Tel: 61 32182314 2315 - <http://www.agricultura.gov.br>

TECHNICAL NOTE Nº 24/2016/SDA/GM/MAPA

CASE FILE Nº 21000.016923/2016/-29

TO: SECRETARIAT OF ANIMAL AND PLANT HEALTH - SDA

RE:

China. Export. Poultry. Dioxin detection. Action Plan of the Secretariat of Animal and Plant Health. Final Report.

EXECUTIVE SUMMARY

2.1 This Technical Note intends to present the final report of the investigation coordinated by the Ministry of Agriculture, Livestock and Food Supply (MAPA)'s Secretariat for Animal and Plant Health (SDA) of the detection of dioxin in shipments of poultry meat sent by a) BRF S/A, an establishment inspected by Federal Inspection Service SIF 1001, in Rio Verde, State of Goiás; and b) Bello Alimentos Ltda, inspected by SIF 3409, in Itaquiraí, State of Mato Grosso do Sul.

In the case of BRF/SIF 1001 an investigation was begun for each notification of violation, as laid down by Memorandum nº 199/2015/CGPE/DIPOA, dated 30 July 2015, Memorandum nº 229/2015/CGPE/DIPOA, dated 26 August 2015, and Memorandum nº 273/2015/CGPE/DIPOA, dated 15 September 2015, concerning loads shipped under International Health Certificates



Thank You!