

Mycotoxin management risk in the french cereal sector

-Presentation of a guide-

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INTERCEREALES

Inter-branch Association of french cereal sector

- A private association recognised by the public authorities composed by professional organisations of production, collection, trading and first processing
- **Contribute to develop the cereals sector :**
 - ↪ Research and development (ARVALIS)
 - ↪ Information of the public
 - ↪ Promotion of French cereals in international markets
 - ↪ Facilitate inter-branch dialogue, including food and feed security

13 Members

Production

- ◆ **AGPB** Association Générale des Producteurs de Blé
- ◆ **AGPM** Association Générale des Producteurs de Maïs

Collection / Trading

- ◆ **Coop de France métiers du grain**
- ◆ **FNA** Fédération du Négoce Agricole
- ◆ **SYMEX** Syndicat Français de la Meunerie d'Exportation
- ◆ **SYNACOMEX** Syndicat National du Commerce Extérieur des Céréales

First processing

- ◆ **ANMF** Association Nationale de la Meunerie Française
- ◆ **CFSI** Comité Français de la Semoulerie Industrielle
- ◆ **Coop de France Nutrition Animale**
- ◆ **SNIA** Syndicat National de l'Industrie de la Nutrition Animale
- ◆ **Malteurs de France**
- ◆ **USIPA** Union des Syndicats des Industries des Produits Amylacés et de leurs dérivés
- ◆ **USM** Union de la Semoulerie de Maïs

Introduction

- ↪ R 1881/2006 - maximum levels for *Fusarium*-toxins into force from 1st July 2006 for human consumption (1st october 2007 for maize)
- ↪ Being below maximum levels = a new condition to accede to the markets
- ↪ Mycotoxins : very stable compounds, not degraded during processing

Mycotoxin management: from theory to practice

Why many difficulties in applying the regulation ?

Mainly due to the climate, by definition non controllable

+

Non visible in the field before harvest

+

Harvest on a very short time : difficulties to evaluate
the risk of each lot

+

Heterogeneous contagion inside a lot

+

Uncertainty from sampling itself and from analysis

+

Different methods for analysis



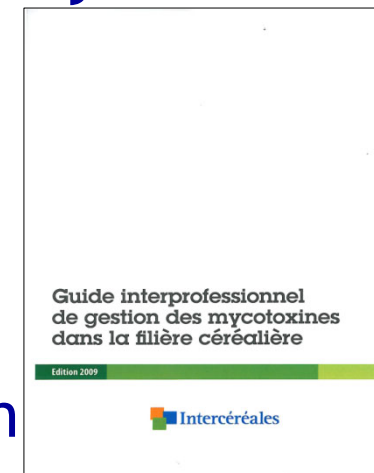
Possible misunderstanding between buyers and sellers

Higher costs

With the experience accumulated over the years

A guide for a practical use, recognized by all

- ↪ To propose harmonized rules for management risk in the cereal sector,
- ↪ To help operators in applying the regulation
- ↪ To understand difficulties of each branch and improve dialogue to avoid commercial problems



Scope of the guide

- ✓ **Mainly *Fusarium*-toxins (produced in the field) but also toxins produced at storage (Ochratoxine A...)**
- ✓ **From field to products and coproducts**
- ✓ **Food and feed**

⇒ *A transversal document*

Content of the guide

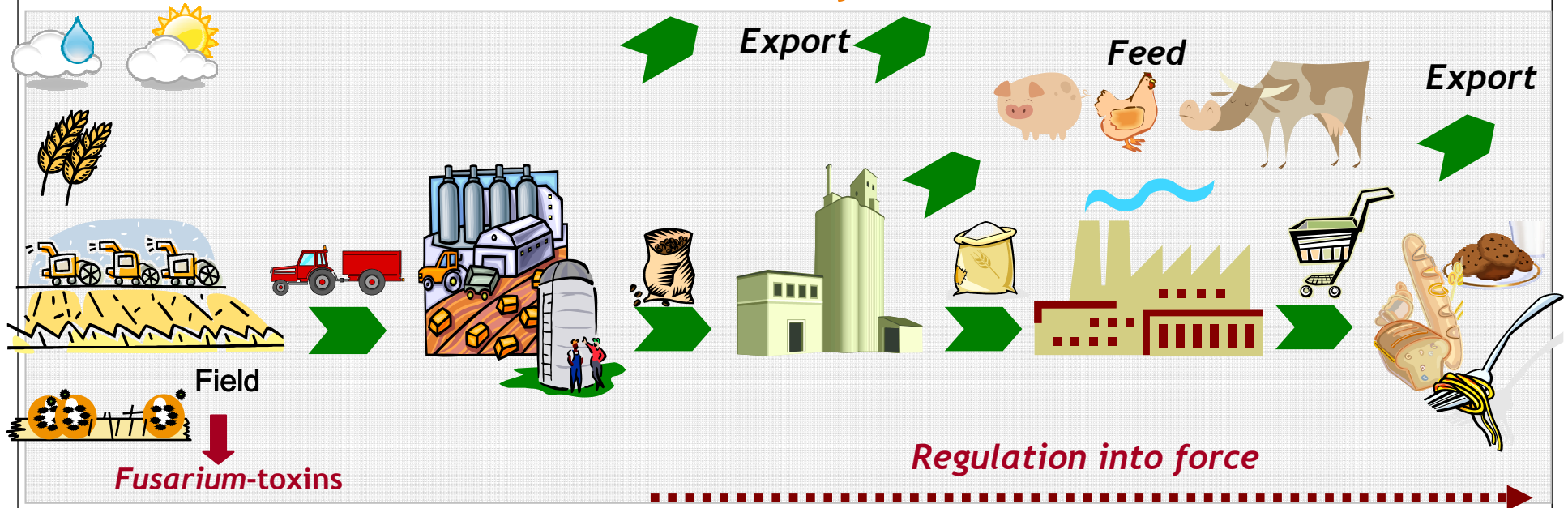
- 1 - Regulation**
- 2 - Cereal sector schema / position of tools**
- 3 - Rules for risk management**
- 4 - Appendix - questions / answers (Q/A)**
- 5 - Description of each sector**

1 - Regulation

- **A summary of regulation into force**
 - MLs in food (R 1881/2006)
 - MLs (D 2002/32) or recommendations (2006/576) in feed
- **Management / rules**
 - Prohibitions on use, mixing and detoxifications by chemical treatments
 - What is unprocessed cereals ?
Possibility of drying, cleaning, sorting
 - Q/A : How to manage a batch which
 - could be with high content of mycotoxins ?
 - is > ML ?

2 - Cereal sector schema

Position of tools



Advice Production

Collect Storage Trading

First processing

Second processing

Predicting tools

National surveys
Private monitoring plans

Monitoring plan (Common - IRTAC ; private)

Sampling norm

Sampling norm

Sampling norm

Guide for rapid analysis

Guide for rapid analysis

Guide for rapid analysis

- **General early assessment of risk**
 - Good Agricultural Practices / Risk assessment matrix
 - Predicting models
 - Field observations
 - Analysis before harvesting
 - Surveys just after harvesting
 - Communication between operators
- **Management by each operator**
 - Monitoring plan of analysis adapted to their own risk
 - Use of rapid analysis methods
- **Common monitoring plans for cereal sector**

- **Sampling and analysis**

Reliable sampling methods

- *Fusarium*-toxins: non homogeneous distribution (even inside a field): distribution depends on fields constituting the lot
- The regulation proposed for official controls is **unapplicable** for large volumes in practice for trading and is adding costs

↪ A more appropriate sampling procedure for *Fusarium*-toxins (French AFNOR - XP V03-777 - june 2008) for grain and cereal product trading

↪ International sampling standard method is published (ISO CEN 24333 - 2009) is a possible alternative for official controls

- Sampling and analysis

R 401/2006 for official controls

Lot weight (tonnes)	Weight or number of sublots	Number of incremental samples
≥ 1 500	500 tonnes	100
> 300 and < 1 500	3 sublots	100
≥ 50 and ≤ 300	100 tonnes	100
> 20 and ≤ 50	--	100
> 10 and ≤ 20	--	60
≤ 10	--	3-40

French AFNOR - XP V03-777
for grain trading

Lot weight (tonnes)	Weight or number of sublots	Number of incremental samples
≥ 1 500	1500 tonnes	15
> 500 and < 1 500	500 tonnes	10
≥ 300 and ≤ 500	--	8
≥ 100 and ≤ 300	--	7
> 45 and ≤ 100	--	6
> 30 and ≤ 45	--	4
≤ 30	--	3

↪ Nevertheless, sampling remains a critical operation...

- **Sampling and analysis**

Rapid analysis methods (for OPERATORS):

- Use of rapid, accurate and cheap methods for a first screening
- Elisa kits or lateral flow devices

Reference analysis methods by chromatography (for LABS):

- Complex analysis with high uncertainty
- Not appropriate for the screening of batches
- Necessity to have standardized and normalized methods

↪ 1st screening by operators with a rapid method

↪ Reference method to confirm a result from rapid method

↪ How to choose a lab ?

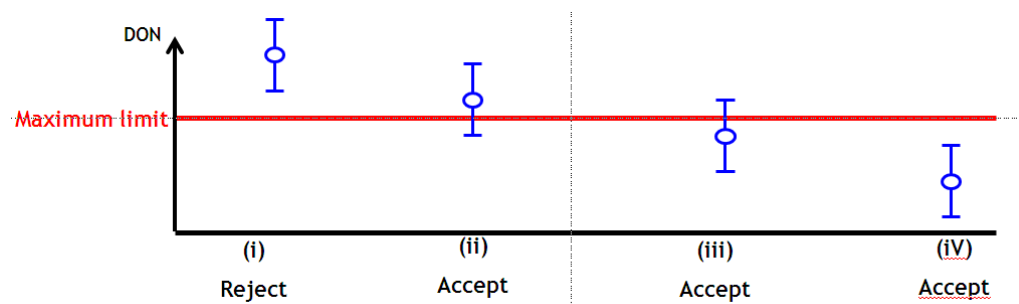
- To be accredited
- To participate to an inter-comparison system
- To comply with performance criteria of R 401/2006

Intercéréales 3 - Rules for risk management

• Uncertainty, reporting and interpretation of results

↳ Compliance with regulation

- R 401/2006 « Rejection if the laboratory sample exceeds the ML beyond reasonable doubt taking into account the correction for recovery and measurement uncertainty »
- R 152/2009
- Guidance document for competent authorities for the control of compliance with EU Legislation on Aflatoxins - march 2009 :



↳ If necessary, it is recommended to precise the rules of interpretation of analysis results in contracts

4 - Appendix

Questions and answers

- **Explanation of the regulation**
- **Questions and answers**
 - ↳ How to choose a lab ?
 - ↳ How to check a result from a lab ?
 - ↳ Which criteria in a reporting ?
 - ↳ What is uncertainty ? How to define it ?
 - ↳ How to interpret a result ?



5 - Description of each branch

- Advice and production
- Collect, storage, trading
- Wheat flour
- Durum wheat meal
- Malt production
- Cornmeal
- Starch sector
- Feed

- ↳ Position in cereal sector
- ↳ Specificity of the branch
- ↳ Asset and constraint of the branch
- ↳ Maximum limit into force and place of application
- ↳ Specific tools of prevention, and self control means

↳ Mutual understanding of constraints and capacities of each other

Elaboration and Promotion of the guide



February 2008 : Working Group during 1,5 year come out an agreement

July 2009 : First information to operators

November 2009 :

- Communication of the final document to operators and adapted promotion by each national association
- Presentation to French administration and exchange
- Press Conference towards professional press

↪ **This document is appreciated as a first step**

Next step ?

The guide = an ongoing process
Previously Improvement in 2010 based on a come back
From operators

*Mycotoxin risk management needs
knowledge of each branch
and
regular dialogue between operators of the sector*

Thank you for your attention

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