



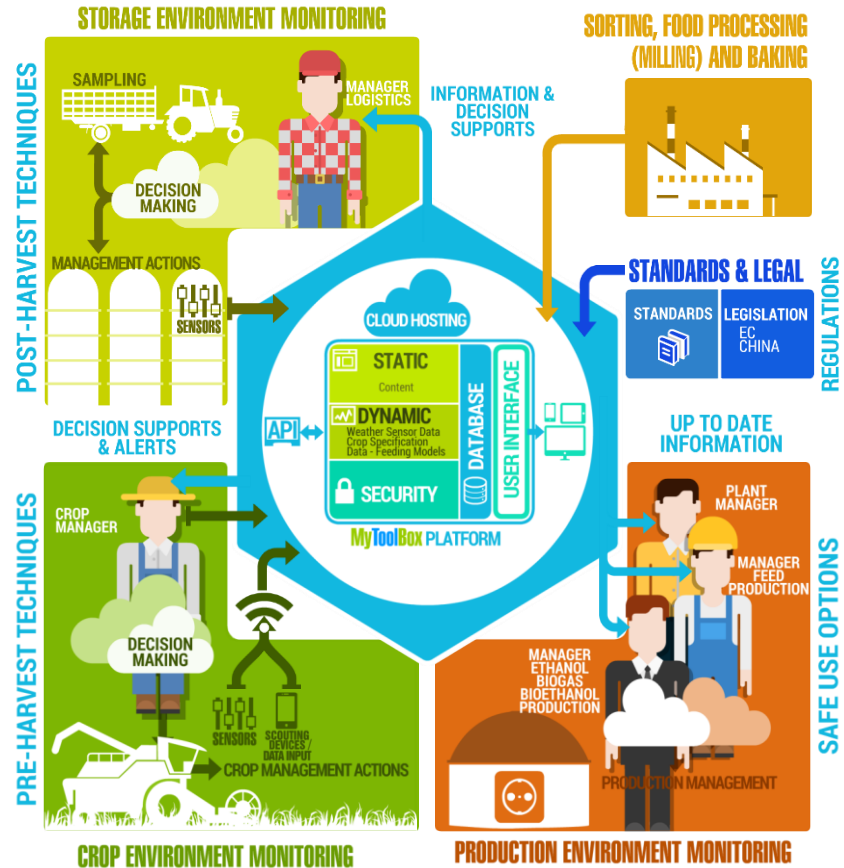
MyToolBox DSS for storage of grains and nuts in China and early forecasting in Europe - with suggestions as to how these techniques could potentially be used/transferred to Africa


R. Krska, I. van der Fels-Klerx, R. Schuhmacher, F. Berthiller, M. Sulyok, D. Stadler, J. Gilbert, O. McNerney, M. Pichler, S. Edwards, M. Suman, N. Magan, V. Rossi, F. Bagi, C. Fauhl-Hassek, M. de Nijs





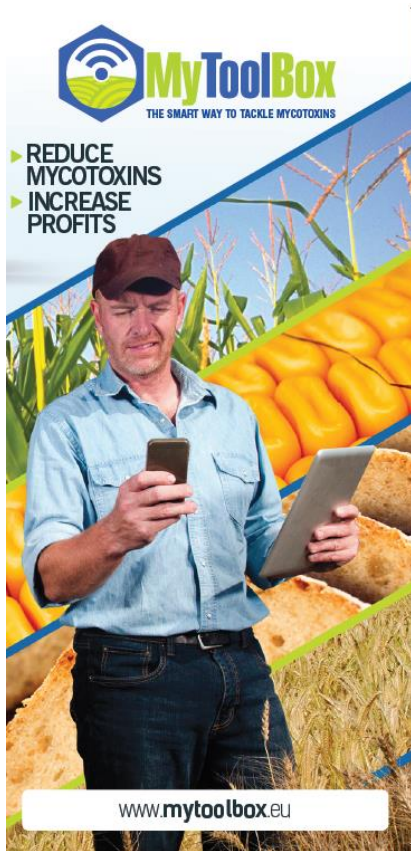
RESEARCH & INNOVATION
Horizon 2020





MyToolBox
THE SMART WAY TO TACKLE MYCOTOXINS

- ▶ REDUCE MYCOTOXINS
- ▶ INCREASE PROFITS



www.mytoolbox.eu

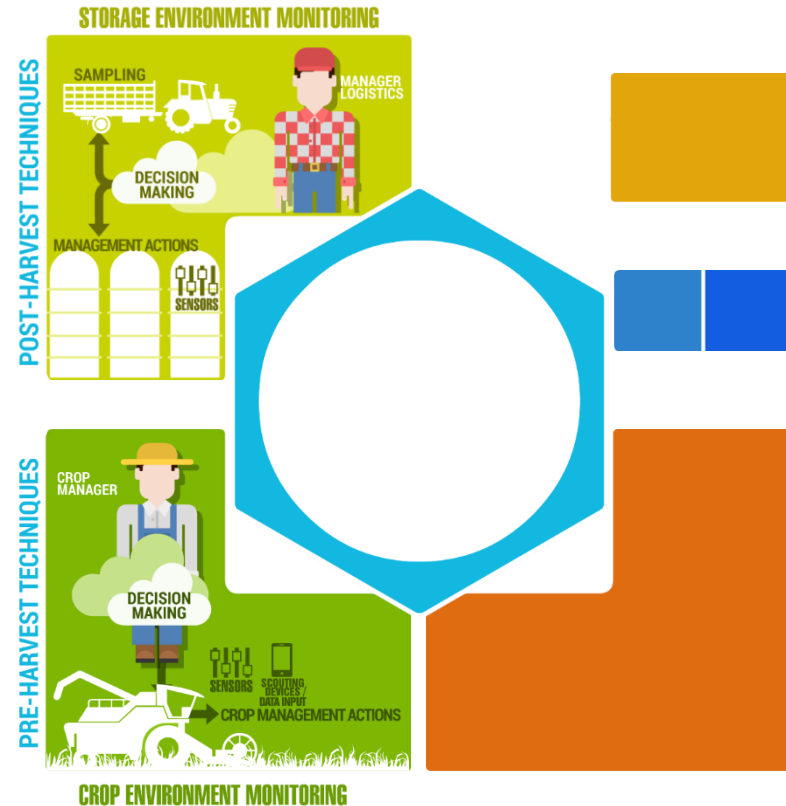


The MyToolBox Approach

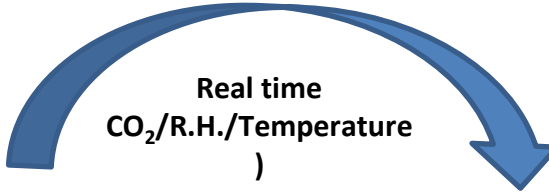
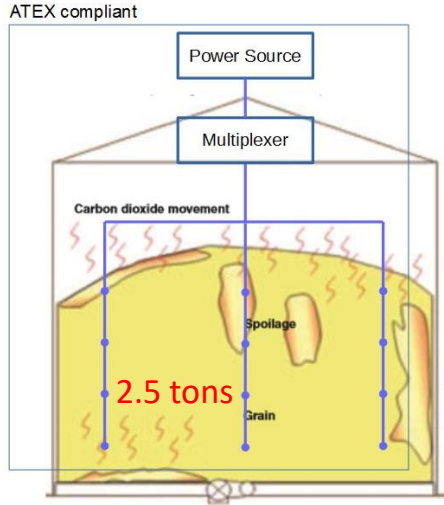
THE SMART WAY TO TACKLE MYCOTOXINS

Post-harvest I:

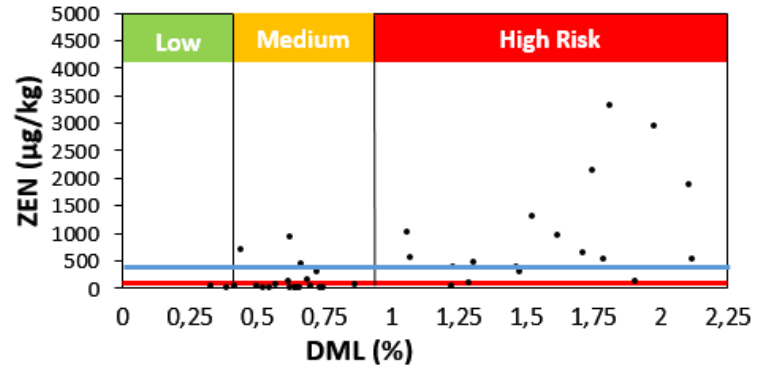
- To establish real-time post-harvest environmental monitoring systems for storage of cereals



Real time environmental monitoring system



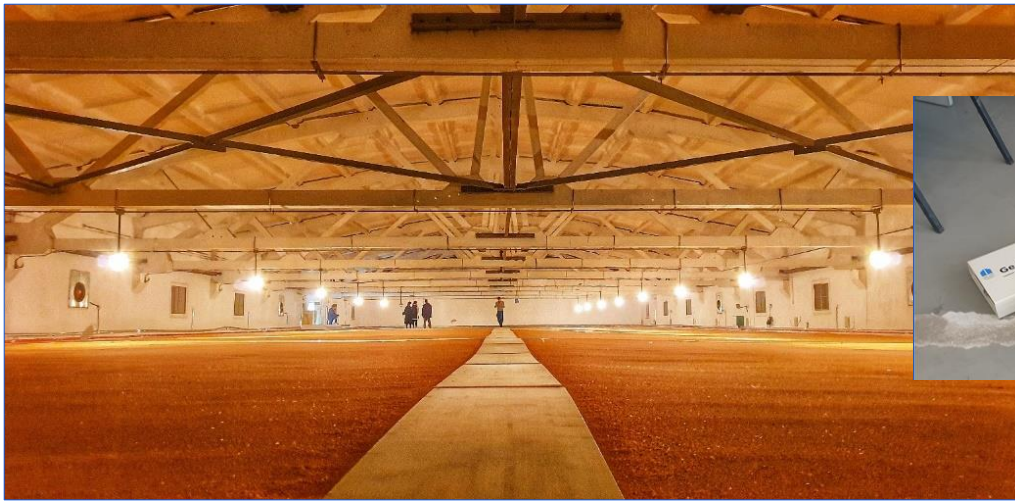
Linking physical data with biological models of **ZEN**, **OTA** and **aflatoxin** production



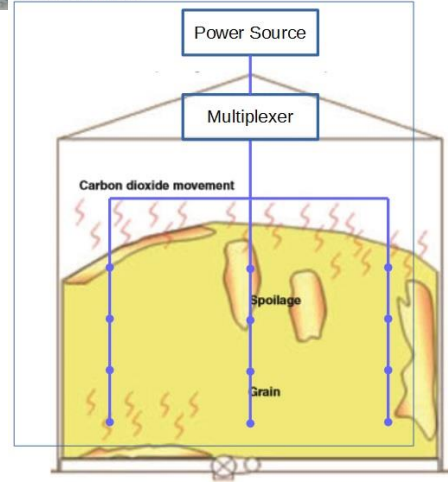
- CO₂ production linked to nutritional losses
- calculated as **dry matter losses**
- risk of **ZEN** contamination above EU limit

Installing CO₂, T and RH sensors in large grain silos (6000 tons each) near Beijing

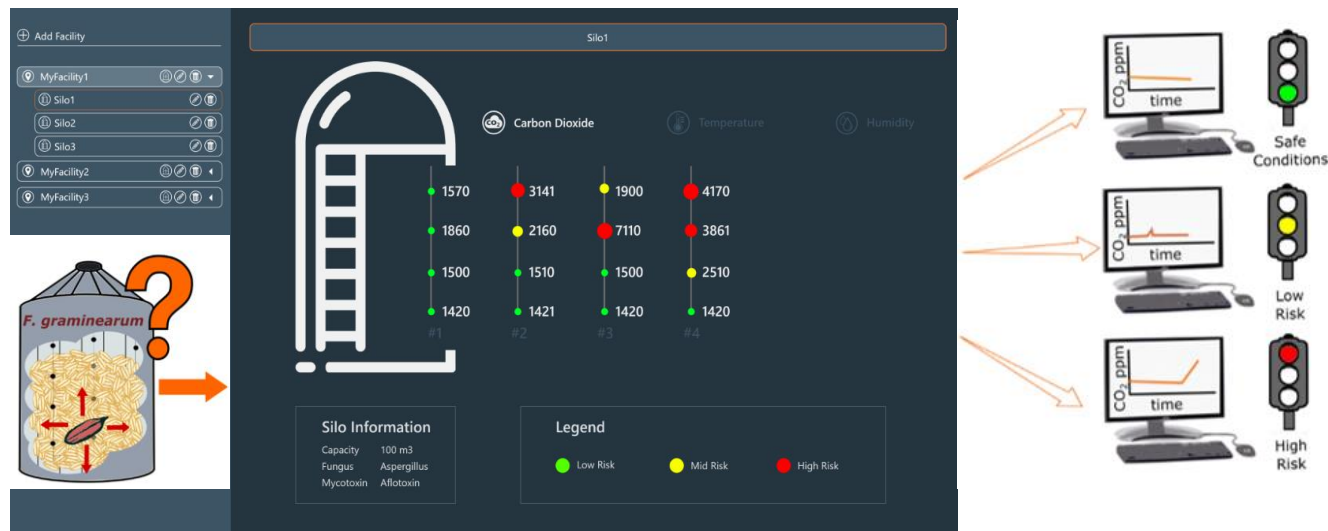




ATEX compliant



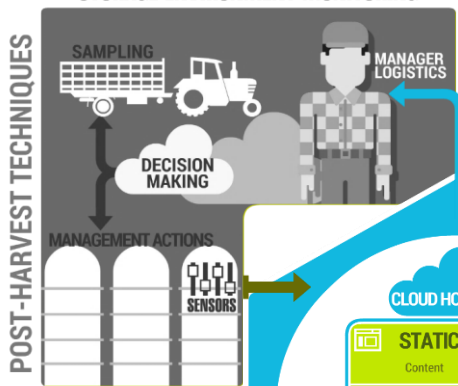
Real time environmental monitoring system



Achievements:

- **CO₂** early and better indicator than temperature rise since grains are good insulators
- **Decision support systems** for pilot silos installed for peanuts in **China** (and for maize at Barilla)

STORAGE ENVIRONMENT MONITORING



SORTING, FOOD PROCESSING (MILLING) AND BAKING

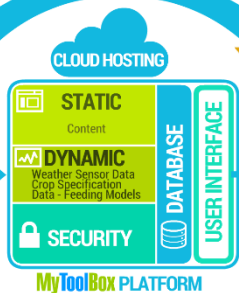
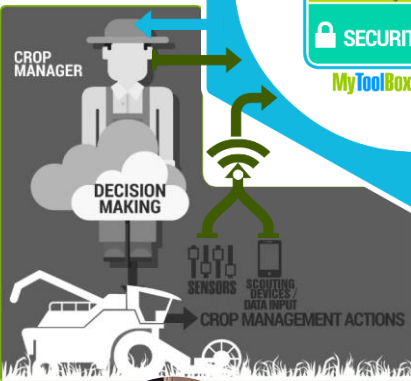


INFORMATION & DECISION SUPPORTS

POST-HARVEST TECHNIQUES

DECISION SUPPORTS & ALERTS

PRE-HARVEST TECHNIQUES



STANDARDS & LEGAL REGULATIONS



REGULATIONS

UP TO DATE INFORMATION



SAFE USE OPTIONS

PRODUCTION ENVIRONMENT MONITORING



Good Agricultural Practice (GAP)

- **GAP** is well documented by CAC, FAO, Government Agriculture Departments
- Mostly they are lengthy detailed texts
- **NOT in user-friendly format**

Examples

CODE OF PRACTICE FOR THE PREVENTION AND REDUCTION OF AFLATOXIN CONTAMINATION IN DRIED FIGS

CAC/RCP 65-2008

INTRODUCTION

1. The elaboration and acceptance of a Code provide uniform guidance for all countries to manage contamination by various mycotoxins of importance in order to ensure protection of the consumer in producer and importer countries. All dried figs should be prepared in accordance with the Recommended International Code of Practice for the Prevention and Reduction of Aflatoxin Contamination in Dried Figs.

CAC/RCP 55 - 2004

CODE OF PRACTICE FOR THE PREVENTION AND REDUCTION OF AFLATOXIN CONTAMINATION IN PEANUTS

CAC/RCP 55 - 2004

1. SCOPE

1. This document is intended to provide guidance for all interested parties producing and handling peanuts for entry into international trade for human consumption. All peanuts should be prepared and handled in accordance with the Recommended International Code of Practice - General Principles of Food Hygiene¹, which are relevant for all foods being prepared for human consumption. These codes of practice indicate the measures that should be implemented by all persons that have the responsibility for assuring that the food is safe and suitable for consumption.

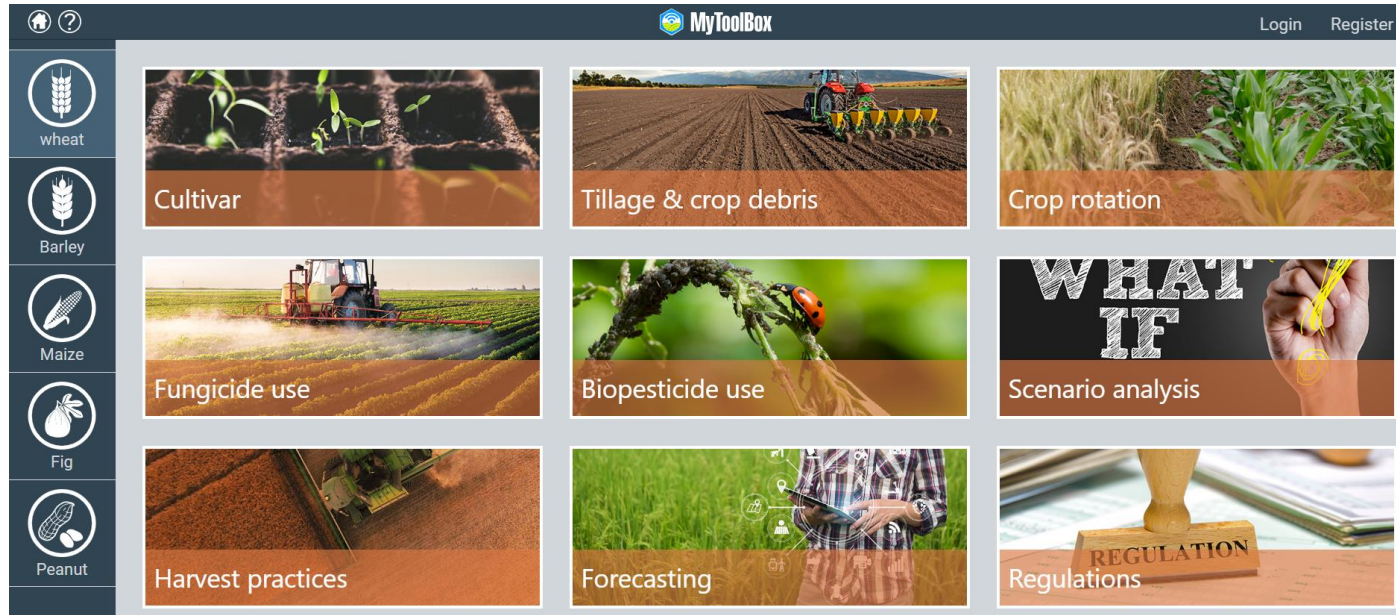
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The **MyToolBox** Approach: MyToolBox-e-platform for

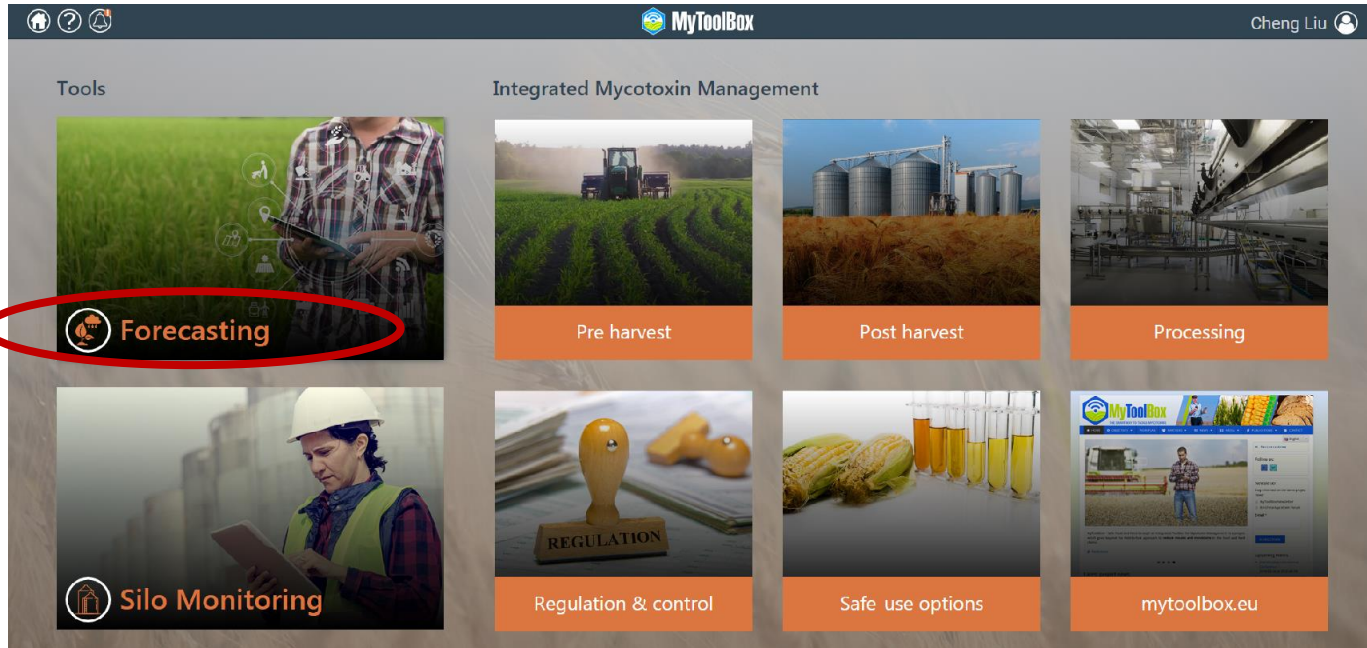
THE SMART WAY TO TACKLE MYCOTOXINS

Integrated Mycotoxin management

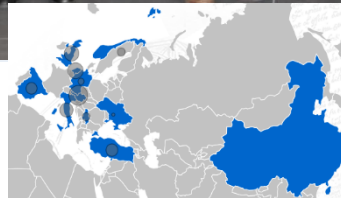
Advice to farmers can be provided through smart tools



➤ **MyToolBox e-platform developed => advice to end-users and forecasting tool for farmers**



The MyToolBox consortium



Kick-off meeting
on March 8/9, 2016, @ BOKU/UFT, Tulln