CRISTAL = Communicate Reliable Information & Systems To Agriculture and Logistics

A GLOBAL TRACK AND TRACEABILITY INITIATIVE OF THE CROP PROTECTION INDUSTRY
CRISTAL Agenda

• Starting point
• CRISTAL update
• Scope of CRISTAL
• Benefits
• Comparison of approaches
• Global traceability initiatives
• Implementation of traceability

http://croplife.org/about/members/
Starting Point

Ever increasing pressure for tighter Traceability in our industry worldwide

The Crop Protection industry is one of the most heavily regulated industries

Market share of illegal crop protection products is estimated to be ~ 10%

Legislation for traceability of agrochemicals has begun in some countries

Strong push from distribution channels for traceability in mature market (Europe)

Increasing requirements for documentation and data recording from authorities

Food chain requests for more sustainability and traceability from the farm to the fork

Public Traceability expectations from other industries (Food & Pharma)
CRISTAL Update

History

First release of CRISTAL was in May 2000 under the umbrella of ECPA (Still in use)

Case for Change

Much more information is now required in machine readable format, with more and more required on primary packaging for consumers

Initially only EAN-13 and EAN-128 linear bar codes were defined as data carriers. New developments like 2D Data Matrix have been added and future developments will come (e.g. RFID)

Electronic data exchanges between trading partners gains more and more importance, but messaging content is not harmonized

Ever faster and more reliable automatic data recording is needed

Need to update our practices

In line with global GS1 standards of coding, including 2D Data Matrix and data exchange formats (EDI/XML/...)
Scope of CRISTAL

MAJOR DRIVER
The use of a “Common Language” across the Agro-Industry will ease implementation, facilitate data acquisition & exchange and inter-operability between partners

• Provide common practices and guidelines in:
  - Data encoding and printing
  - Requirements for data exchange content to support traceability

• Proactively communicate these common practices and provide implementation guidance to the industry world-wide
Scope of CRISTAL

- Support supply chain agility from producers to end users
- Enhanced Total Quality Management
- Improved product data accuracy and ability to acquire it
- Reduced product obsolescence along the distribution chain
- Creates new opportunities in Customer Relationship Management
- Enhanced product safety and product stewardship
- Help farmers to use only registered crop protection products in the right quality and protecting against use of illegal product with unknown content
Scope of Cristal

Consumer unit

Trade unit

Logistic unit

Based on a **2D data matrix code** for all units

- **Consumer unit**
  - **Mandatory**: GTIN – Production date – batch number
  - **Optional**: Serial number – expiry date

- **Trade & Logistic unit** (e.g. box, pallet, ...)
  - Additional **SSCC** (Serial Shipment Container Code)
Scope of CRISTAL

Current Status

- **T&T CODING DOCUMENTS AVAILABLE IN SEVERAL LANGUAGES** (English, French, German and soon Spanish and Portuguese...)

- **T&T SUPPORTING DOCUMENT**: GLOSSARY, 2D DATA MATRIX TECHNOLOGY COMPARISON

- “CRISTAL On-Boarding Handbook”

- **COMMUNICATION** TO OUTSIDE ORGANISATIONS (SENASA, COCERAL)

- **EVALUATION OF EPCIS** DATA EXCHANGE MADE

- **CRISTAL COLLABORATING GLOBALLY** TO CREATE A COMMON BASELINE FOR CODING AND TRACEABILITY PRACTICE
Comparison of Approaches
**SC TRACE - France**

### Example of a distribution driven project

| Initiative | • Pilot group set up in **January 2011**, based on customer request  
• Representing about 70 – 80 % of the French crop protection market |
| Members of the pilot group | • **Suppliers** : Bayer, BASF, Dow, Limagrain, Syngenta  
• **Distributors** : AREA, InterraLog, InVivo, Odalis, Seveal, Soufflet Agriculture |
| Associated stakeholders | • **Agro EDI Europe** association (data exchanges, group together all suppliers and distributors of the French market)  
• **CRISTAL** (CLI, for global traceability recommendations)  
• **UIPP** (French crop protection organization) |
| Operational implementation | • **Handover to the AgroEDI Europe** (AEE) to coordinate country implementation  
(***the majority of the French distributors (coops and private resellers), as also the French CP association (UIPP) and the CP companies themselves are members of AEE***)  
• Initial pilot group acts as **steering committee**  
• Establishment of a **monitoring committee**  
(***framework approach between professional associations***)  
  • Distributor’s associations (**FNA, Coop de France**), CP association (**UIPP**) & AEE  
  • Global project follow-up and meetings with the administration (**advocacy***) |
| Extensions & enhancements | • Extension to seed business (ongoing working group within the French seed association (**UFS**))  
• Product verification (**anti counterfeiting**) via optional serial number on the bottle |
Track & Trace - Argentina

Example of a country driven project

Input data / select event
Track & Trace - Argentina

Event based batch traceability
Initiatives around the world
## Initiatives – Status 2016

<table>
<thead>
<tr>
<th>COUNTRIES AREAS</th>
<th>INITIATOR ORIGINAL REQUEST</th>
<th>STANDARD POTENTIALLY USED</th>
<th>ESTIMATED TIMELINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRAZIL</td>
<td>INDUSTRY + GOVERNMENT (SINDAG)</td>
<td>GS1 (2D data matrix) Aggregation</td>
<td>2016? LAW IS READY BUT NOT YET VOTED.</td>
</tr>
<tr>
<td>ARGENTINA</td>
<td>GOVERNMENT SENASA</td>
<td>GS1 (2D data matrix)</td>
<td>IMPLEMENTED SINCE 2014</td>
</tr>
<tr>
<td>CHILE</td>
<td>DISTRIBUTOR</td>
<td>GS1 2D data matrix</td>
<td>2013 Implemented</td>
</tr>
<tr>
<td>CHINA</td>
<td>GOVERNMENT</td>
<td>QR CODE</td>
<td>2017? IDENTIFICATION</td>
</tr>
<tr>
<td>EUROPE</td>
<td>EU INDUSTRY + DISTRIBUTION</td>
<td>GS1 2D datamatrix EAN 128</td>
<td>Ongoing projects: France by end 2017 Germany, Netherlands Starting initiatives: Czech Republic, Poland, Turkey, UK</td>
</tr>
<tr>
<td>AUSTRALIA</td>
<td>INDUSTRY + DISTRIBUTION</td>
<td>GS1 2D datamatrix EAN 128</td>
<td>ON HOLD</td>
</tr>
</tbody>
</table>

- **International working meeting**
- October 20th, 2017
# Initiatives EMEA – Status 2017

<table>
<thead>
<tr>
<th>Country</th>
<th>Initiator(s)</th>
<th>Name + launch</th>
<th>Status</th>
<th>Stakeholders</th>
<th>Main objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>Industry</td>
<td>2017</td>
<td>Presentation of the Dutch project, March 2017</td>
<td>• Industry (Phytofar)</td>
<td>• Decision to set up a working group and to involve also the distribution (Phytofar)</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>• Alignment with the projects in France and in the NL</td>
</tr>
<tr>
<td>CZ Republic</td>
<td>Czech MoA Industry</td>
<td>2016</td>
<td>First meeting in Prague, July 2016</td>
<td>• Czech MoA</td>
<td>• Channel transparency (where the products are)</td>
</tr>
<tr>
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<td></td>
<td></td>
<td>• Industry (CCPA, CZ CPA)</td>
<td>• Support the inspection work done by the administration</td>
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<td></td>
<td></td>
<td></td>
<td>• Anti-counterfeiting</td>
</tr>
<tr>
<td>France</td>
<td>Distribution</td>
<td>SC Trace, 2011</td>
<td>Implementation</td>
<td>• Distribution (CfE, FNA)</td>
<td>• Operational excellence</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Industry (U IPP, U FS, ...)</td>
<td>• Working capital (stocks, prod. obsolescence)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Prof. organizations</td>
<td>• Channel management (relabeling, recalls)</td>
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<td></td>
<td></td>
<td>• Administration (DGAL)</td>
<td>• Responsible care (product safety &amp; stewardship)</td>
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<td></td>
<td></td>
<td></td>
<td>• Channel transparency (distributors &lt;-&gt; farmers)</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>• Legal requirements -&gt; 2D on all products end of 2017</td>
</tr>
<tr>
<td>Germany</td>
<td>Industry</td>
<td>ASCAL, 2014</td>
<td>Handover in Feb. 2017 to economic committee (WiStaP) of the IVA</td>
<td>• Industry (IVA)</td>
<td>• Market information from wholesalers and retailers (inventories and sales)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Distribution</td>
<td>• potential use of serial numbers for loyalty program</td>
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<td></td>
<td></td>
<td>• Logistics efficiency &amp; stock management (FEFO, obsolescence, channel inventory)</td>
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<tr>
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<td></td>
<td>• WiStaP to decide next steps, mainly data exchanges with the distribution</td>
</tr>
<tr>
<td>Netherlands</td>
<td>Dutch authorities</td>
<td>2013</td>
<td>Ongoing working group</td>
<td>• Distribution (Agrodis)</td>
<td>• Recall within 24h (initial demand from the authorities)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Industry (Nefyto)</td>
<td>• Improved information flow throughout the entire SC</td>
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<td></td>
<td>• More efficient administration, improved stock management, less logistic/ administrative errors</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Main issue: data exchanges within distribution channel</td>
</tr>
<tr>
<td>Poland</td>
<td>Distributors</td>
<td>2016</td>
<td>First meeting in Warsaw, March 2016</td>
<td>• Distribution (POLSOR)</td>
<td>• Reflections: logistics and stock management (expiry dates …), information flow within distribution channel, channel inventory, channel transparency (sales) …</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td>• PSOR (Polish CPA)</td>
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<td></td>
<td>• Plant Health &amp; Seed Inspect.</td>
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<td>• COCERAL</td>
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<tr>
<td>Turkey</td>
<td>Turkish MoA</td>
<td>2016</td>
<td>Industry meeting in Antalya, April 2016</td>
<td>• General Directorate of Food and Control, MoA Turkey</td>
<td>• Traceability application of the Turkish MoA: wider and more systematic control of the pesticide use (faked and illegal products, use of obsolete and/or withdrawn products, residues control, etc.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Industry</td>
<td>• Requirements MoA: serialization, aggregation bottle/box, software &amp; serial numbers provided by MoA, but no written document for the time being</td>
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<td></td>
<td></td>
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<td></td>
<td>• ZIMID (Turkish CPA)</td>
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</tr>
<tr>
<td>UK</td>
<td>Industry</td>
<td>September 2016</td>
<td>Commitment to TnT, common working group</td>
<td>• Industry (CPA)</td>
<td>• Visit in France in April 2017</td>
</tr>
<tr>
<td></td>
<td>Distribution</td>
<td></td>
<td></td>
<td>• Distribution (AIC)</td>
<td>• Not convinced by batch tagging, main interest = MAPP management (link MAPP - T&amp;T to be deepen)</td>
</tr>
</tbody>
</table>

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15 • International working meeting • October 20th, 2017

Helping Farmers Grow
CRISTAL COMMON PRACTICE – ENABLING TRACEABILITY

Thank You!