an European multi-stakeholder project for the development of **Pesticide Best Management Practices for Water Protection**

*Isabelle De Paepe (BASF), Ronan Vigouroux (UIPP), Julie Maillet-Mezeray (BAYER CS), Manfred Röttele (BetterDecisions), on behalf of ECPA and UIPP*
Project birth in 2005

- From the 90’s, pesticide registrations are more demanding on environmental issues
  - Predicted environmental concentrations (PEC) from drift, run-off, drainage, infiltration (lab, field, modelling)
  - Set of new mitigation measures: dose, dates, ...
    - If local vulnerability: specific proposals

- In 2000, EU Water Framework Directive (2000/60) gave ambitious targets for pesticides, and their relevant metabolites, in all water bodies
  - Drinking water and groundwater: 0.1 μg/L
  - Surface water: EQS values, or national targets

In 2005, ECPA* proposal:
Develop an EU-wide network of experts from agricultural academies, institutes and industries, to promote
1. agreed BMPs** and decision support tools
2. official trainings and subsidy programs

* ECPA: European Crop Protection Association
** BMP: Best management practice
The successive TOPPS projects

**Train Operators to Promote best Practices & Sustainability**

**TOPPS**

- 22 EU countries
- Focus on point sources and remnants mgnt
- Booklets/flyers
- Trainings & demos

**Bridge + EOS**

- 9 EU countries
- Focus on drift / sprayers
- On line tool

**AIM**

- 7 EU countries
- Focus on surface runoff
- Booklet/flyers
- Trainings & demos

**TOPPS extension**

- 12 EU countries
- Focus on drainage and leaching
- Trainings & demos

**Point sources**

**Diffuse sources**

- ECPA + EU funding
- ECPA + partner funding
- ECPA funding

<table>
<thead>
<tr>
<th>Year</th>
<th>Funding</th>
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<tbody>
<tr>
<td>2005</td>
<td>ECPA + EU funding</td>
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<tr>
<td>2008</td>
<td>ECPA + partner funding</td>
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<tr>
<td>2011</td>
<td>ECPA funding</td>
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<tr>
<td>2015</td>
<td></td>
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<td>2018</td>
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EU-countries involved and main productions

- **TOPPS – life (2005+)**
  Point sources BMPs / Materials
  Europe wide (22 countries)

- **TOPPS – EOS (2008+)**
  Environmentally optimized sprayer:
  Expert information tool (9 countries)

  BMPs + materials to address diffuse pesticide losses to water
  (7 countries)

- **TOPPS Water Protection (2015+)**
  Dissemination and implementation of BMPs (12 countries)
  **Budget 2015-2018**: 1,8 K€ (over 3 years)
External Partner Network

- technical knowledge, practical experience, local expertise

- Multi-skilled group: farm advisors, scientists from agricultural academia/institutes, representatives from official bodies
Overview of TOPPS out-put

Water Pathway Field Diagnosis

Point Sources

Surface Runoff

Drainage

Leaching

1. Diagnosis preparation: identification of landscape, of the type of soil, climatic data, field maps
2. Field diagnosis: diagnosis of soil water flow regime, agronomic practices, landscape factors
3. Define risk situations with the dashboards

Spray Drift

Best Management Practices to reduce point sources.

Best Management Practices to reduce spray drift.

Vulnerability Diagnosis: Drainflow potential of fields with artificial subsurface drainage systems

Vulnerability Diagnosis: Leaching potential of fields

1: Groundwater ≤1 m below soil surface at some time of the year
2: Cracks of ≥3 cm at the soil surface
3: Soils developed on fissured karsas, with shallow (<30 cm), stone-rich (>10%) topsoil
How it works?
Example in the Yser watershed (Belgium)

Catchment Definition

Catchment Management Plan

Farmer Meetings
Field Diagnosis

Catchment Risk Plan

Legend:
- Green: Low
- Orange: Moderate
- Red: High
- Brown: Very high
- White: Not applicable

Vegetated buffers

Interridge bunds

Fascines

Vletterbeek catchment: Runoff due to infiltration excess
TOPPS in figures

<table>
<thead>
<tr>
<th>From 2005 to 2014: delivery of common BMPs</th>
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<tbody>
<tr>
<td>➢ 22 countries</td>
</tr>
<tr>
<td>➢ 31 partners academies, institutes, organisations</td>
</tr>
<tr>
<td>➢ + 400,000 documents, brochures, leaflets</td>
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<tr>
<td>➢ 36,000 farmers or local advisors in trainings</td>
</tr>
<tr>
<td>➢ + 500,000 viewers or visitors of TV, journals, fairs</td>
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<tr>
<td>➢ 1 TOPPS website: <a href="http://www.topps-life.org">www.topps-life.org</a></td>
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<tr>
<th>From 2015 onwards: dissemination of BMPs</th>
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<tbody>
<tr>
<td>➢ New trainings in core countries (BE, IT, ES, PL, DE, FR)</td>
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<tr>
<td>➢ Launch or development in other countries (roll-out)</td>
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<tr>
<td>➢ Links with the Directive on Sustainable Use of Pesticide and Country’s National Action Plans</td>
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Conclusion

- **TOPPS concept of external partnering over Europe** has resulted in:
  - development of European harmonized BMPs
  - development of advisors knowledge on water protection
  - increase in farmers awareness
  - promotion of infrastructures and technologies

- **Water protection needs** to be managed along the crop protection process

- **Multi-stakeholder engagement** contributes to the sustainable use of pesticides and sustainable farming
Thanks for all contributors

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Recent actions in France

Drift => trainings organized by IFV
- Nov 2016: 15 trainees from FARRA and CPP industry
- Jan 2017: 46 trainees from chambers of agriculture and distribution

Run-Off => trainings organized by ARVALIS and FARRE
- June-Nov 2016: 9 trainees from FARRE team (train the trainers)
- December 2016: training for FARRE farmers
<table>
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<tr>
<th>Core countries</th>
<th>Extension countries</th>
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<tr>
<td>• BE – InAgro</td>
<td>• GR - Uni Thessaly</td>
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<tr>
<td>• DE – flexible partners</td>
<td>• HU – external consulting</td>
</tr>
<tr>
<td>• ES – Uni Barcelona/ Uni Cordoba</td>
<td>• NL – stakeholder consortium</td>
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<tr>
<td>• FR - Arvalis, IFV, FARRE</td>
<td>• PT – Confagri, CAP</td>
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<tr>
<td>• IT – Uni Turin (2 partners)</td>
<td>• RO – Uni Cluj</td>
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<tr>
<td>• PL – InHort</td>
<td>• SK – Water Res. Institute / Agroinstitute/Prof. Service/ Soil Science Inst.</td>
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