Drift Evaluation Tool

Drift risk diagnosis and effects of mitigation measures

TOPPS stakeholder workshop
Nov 14th 2018 Brussels
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Spray drift is always there!
Key questions for better decisions

What is the risk of water contamination due to drift in SPECIFIC weather and field situation?

What factors need to be considered to assess the risk?

What measures can be used to mitigate the risk?

How efficient are the measures?

EVALUATION TOOL
Objectives

Interactive and user-friendly application:

• diagnose the drift risk
• propose risk mitigation measures
• help the operator make better decisions
• reduce risk of contamination of water and other sensitive areas due to spray drift
Understand the factors influencing spraydrift of Plant Protection Products and how mitigation measures can be used to reduce it

These evaluation tools were developed in the European TOPPS-prowadis project in collaboration with partners and experts from 7 EU countries (BE, DE, DK, ES, FR, IT, PL)

The project was supported by the European Crop Protection ASS. (ECPA)
Factors influencing risk of water contamination

I. APPLICATION SITE
   proximity to water

II. METEO & FIELD CONDITIONS
   uncontrollable factors

III. EQUIPMENT & METHODS
   operator dependent factors

LOCATION

SITUATION

MITIGATION
I. APPLICATION SITE

Proximity to water

spraying within the **zone of awareness** (buffer zone + 5 rows or 20 m)

**Standard situation:**
- Wind: 3-4 m/s
- Temperature: 15-25 °C
- Humidity: 40-60%
- Nozzles: Hollow-cone
- Pressure: >10 bar
- Sprayer: Radial flow
- Driving velocity 6-8 km/h

spraying beyond the **zone of awareness** (buffer zone + 5 rows or 20 m)
II. METEO & FIELD CONDITIONS

Uncontrollable factors

**SITUATION**

**WIND**
- direction
- velocity

**AIR**
- temperature
- relative humidity
II. METEO & FIELD CONDITIONS

Uncontrollable factors

SITUATION

- crop density
- adjacent structures
II. METEO & FIELD CONDITIONS

Uncontrollable factors

**RESULTS**

<table>
<thead>
<tr>
<th>Drift Risk Value</th>
<th>Field &amp; Weather Situation</th>
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<tbody>
<tr>
<td></td>
<td>156%</td>
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**RECOMMENDATION**

HIGH risk of spray drift. Do not spray unless SDRT is used and/or drift reducing application parameters are set. Follow the local regulations and the label recommendations for buffer zones.

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<tr>
<th>Drift Risk Value</th>
<th>Field &amp; Weather Situation</th>
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<tr>
<td></td>
<td>78%</td>
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**RECOMMENDATION**

MEDIUM risk of water contamination by drift. Consider using SDRT and/or setting drift reducing application parameters. Follow the local regulations and the label recommendations for buffer zones.

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<tr>
<th>Drift Risk Value</th>
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**RECOMMENDATION**

LOW risk of spray drift. During spray application periodically check the meteorological conditions and in case of unfavourable weather change, apply the drift mitigation measures. Follow the local regulations and the label recommendations for buffer zones.
III. EQUIPMENT & METHODS

Operator dependent factors

SPRAY DRIFT REDUCTION TECHNOLOGY (SDRT)
(combination of nozzles application parameters and scenarios)
III. EQUIPMENT & METHODS

Operator dependent factors

SPRAYER ADJUSTMENTS

• driving velocity
III. EQUIPMENT & METHODS

Operator dependent factors

SPRAYER ADJUSTMENTS

• spray flow adjustment

MITIGATION

NUMBER of NOZZLES

NOZZLE FLOWRATE
III. EQUIPMENT & METHODS

Operator dependent factors

SPRAYER ADJUSTMENTS

- air flow adjustment

MITIGATION
III. EQUIPMENT & METHODS

Operator dependent factors

- sprayer type
  - AXIAL FLOW
  - CROS-FLOW
  - MULTI-SPOUT
  - TUNNEL REFLECTION
  - RECYCLING

- nozzle type
  - HOLLOW CONE
  - AIR-INDUCTION HOLLOW CONE
  - AIR-INDUCTION FLAT-FAN
  - PNEUMATIC
  - FLAT-FAN
III. EQUIPMENT & METHODS

Operator dependent factors

APPLICATION SCENARIO
(alterring application parameters when approaching water)

MITIGATION

• spray scenario

• air-flow scenario
III. EQUIPMENT & METHODS

Operator dependent factors

RESULTS

Drift Risk Value
Field & Weather Situation
Application Situation

RECOMMENDATION
Under the selected conditions and with your spray application technique the risk of spray drift to sensitive areas is HIGH. Therefore do not spray unless more efficient drift mitigation measures are used or weather conditions are more favourable. Follow the local regulations and the label recommendations for buffer zones.

Drift Risk Value
Field & Weather Situation
Application Situation

RECOMMENDATION
Under the selected conditions and with your spray application technique the spray risk is MEDIUM. However, reconsider using more efficient drift mitigation measures, because unfavourable weather change may turn risk level into HIGH. Follow the local regulations and the label recommendations for buffer zones.

Drift Risk Value
Field & Weather Situation
Application Situation

RECOMMENDATION
Under the selected conditions and with your spray application technique the risk of spray drift is LOW. Follow the local regulations and the label recommendations for buffer zones.
DET application

POTENTIAL USERS:

- applicators
- advisors
- trainers
- teachers
- students
Thank you

and

enjoy using DET application  ;-)

http://www.topps-drift.org/