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 !

TOPPS Water Protection

Key questions for better decisions

What is the risk of water comtamionation due to drift in **S P E C I F I C** 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

TOPPS Water Protection

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

TOPPS PROWADIS

TOPPS-PROWADIS Drift Evaluation Tool

European Crop Protection

english

danish
english
french
german
italian
nederlands
polish
spanish

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)

VIDENCENTRET FOR LANDBRUG

Crop Protection Technology DiSAFA Università di Torino

IFV Institut Français de la Vigne et du Vin

inagro

JKI Julius Kühn-Institut

InHort Skierniewice

UPC Universitat Politècnica de Catalunya BarcelonaTech

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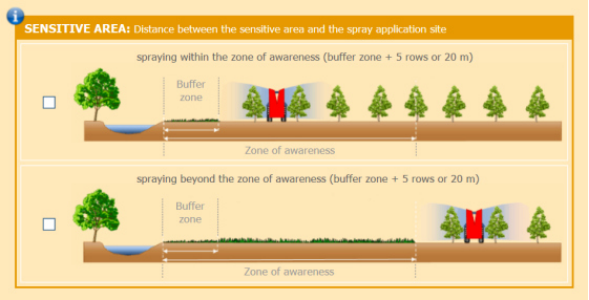
TOPPS
Water Protection

Factors influencing risk of water contamination

I. APPLICATION SITE

proximity to water

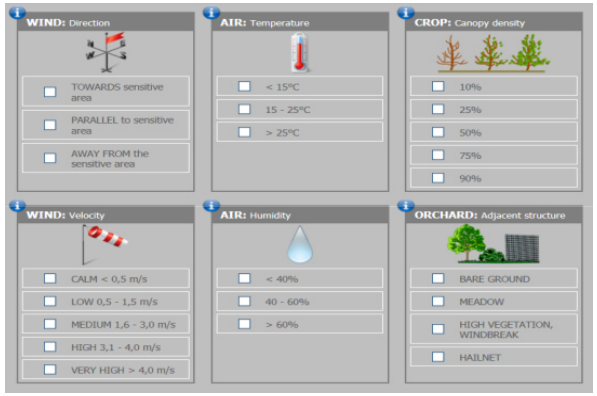
LOCATION



II. METEO & FIELD CONDITIONS

uncontrollable factors

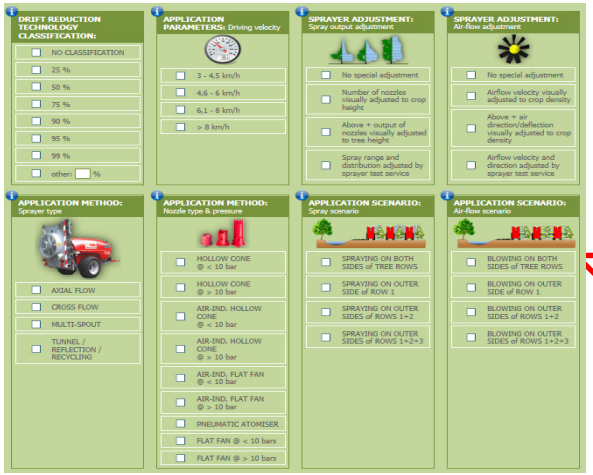
SITUATION



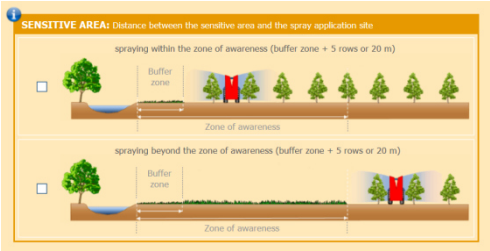
III. EQUIPMENT & METHODS

operator dependent factors

MITIGATION



15 CLICKS



LOCATION

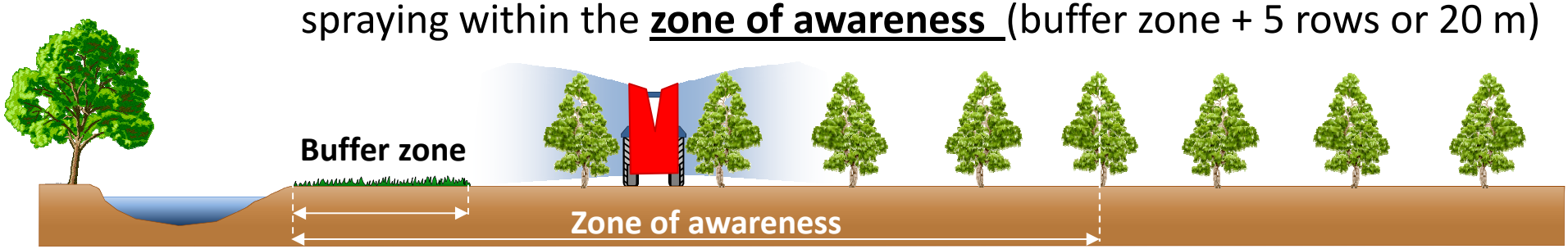
I. APPLICATION SITE

Proximity to water

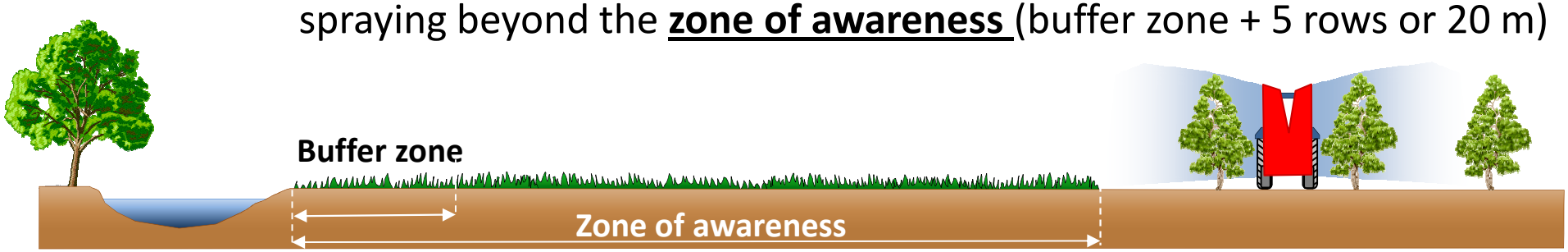
Standard situation:
Wind: 3-4 m/s
Temperature: 15-25 °C
Humidity: 40-60%

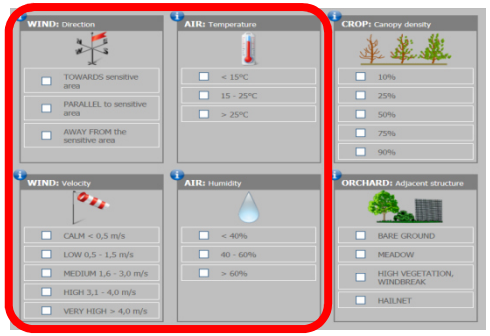
Nozzles: Hollow-cone
Pressure: >10 bar
Sprayer: Radial flow
Driving velocity 6-8 km/h

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



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





SITUATION

II. METEO & FIELD CONDITIONS

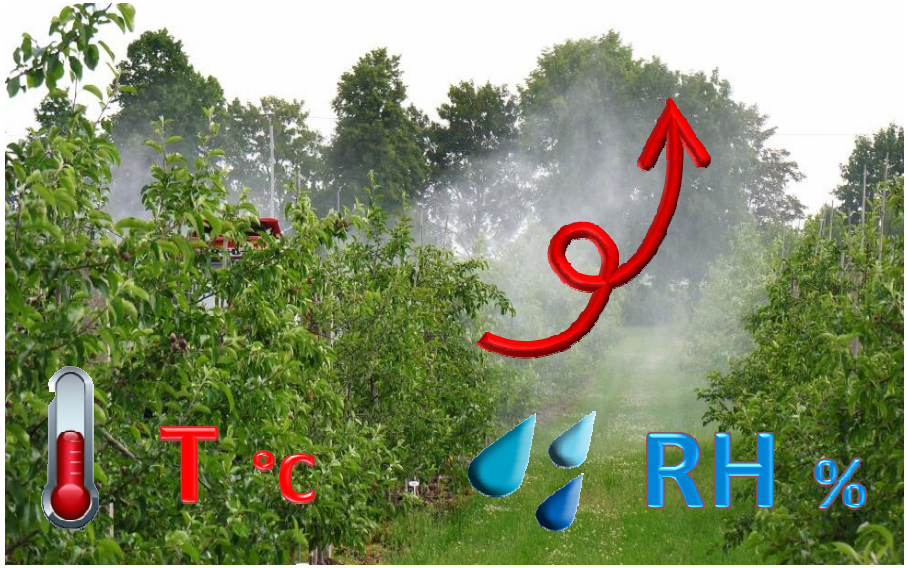
Uncontrollable factors

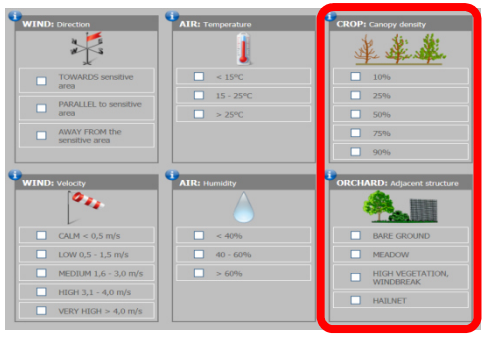
WIND

- direction
- velocity

AIR

- temperature
- relative humidity



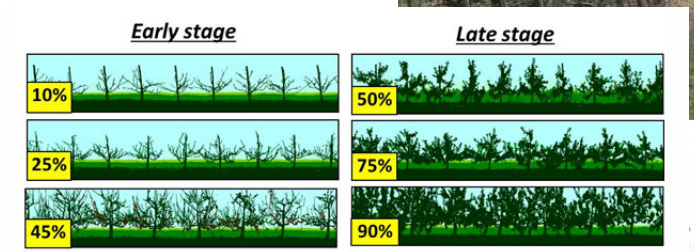


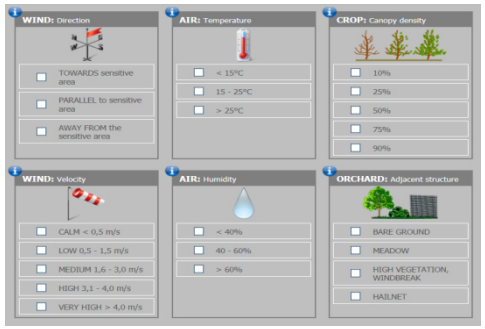
II. METEO & FIELD CONDITIONS

Uncontrollable factors

SITUATION

- **crop density**
- **adjacent structures**





II. METEO & FIELD CONDITIONS

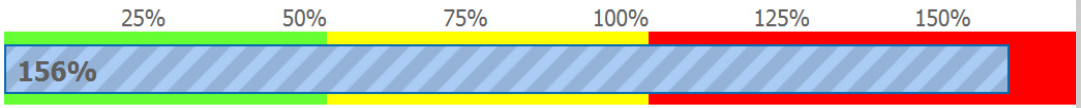
Uncontrollable factors

SITUATION

RESULTS

Drift Risk Value

Field & Weather Situation



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

Drift Risk Value

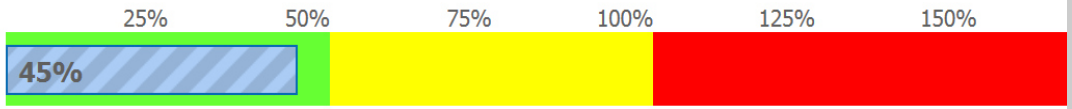
Field & Weather Situation

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

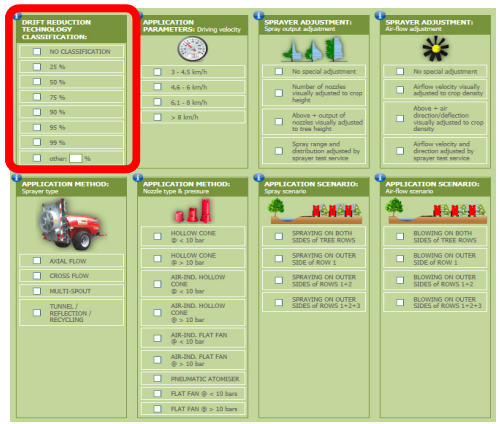
Drift Risk Value

Field & Weather Situation



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



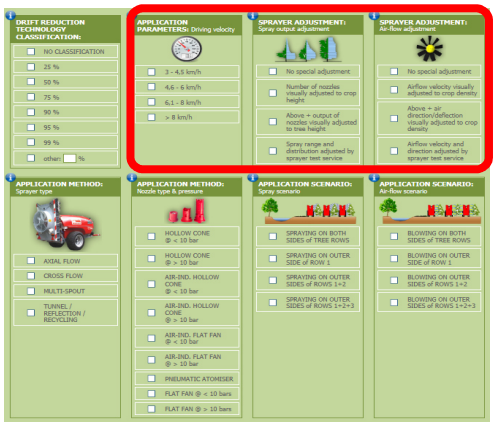
III. EQUIPMENT & METHODS

Operator dependent factors

SPRAY DRIFT REDUCTION TECHNOLOGY (SDRT)

(combination of nozzles application parameters and scenarios)

MITIGATION



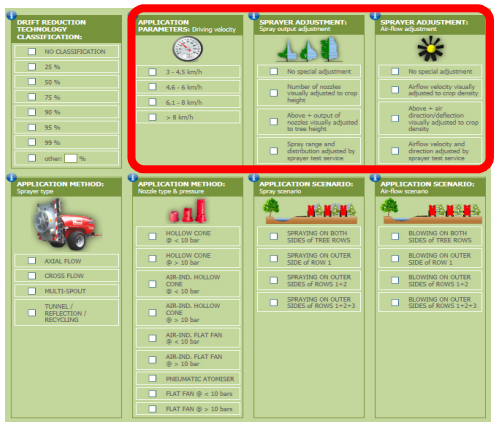
MITIGATION

III. EQUIPMENT & METHODS

Operator dependent factors

SPRAYER ADJUSTMENTS

- driving velocity



MITIGATION

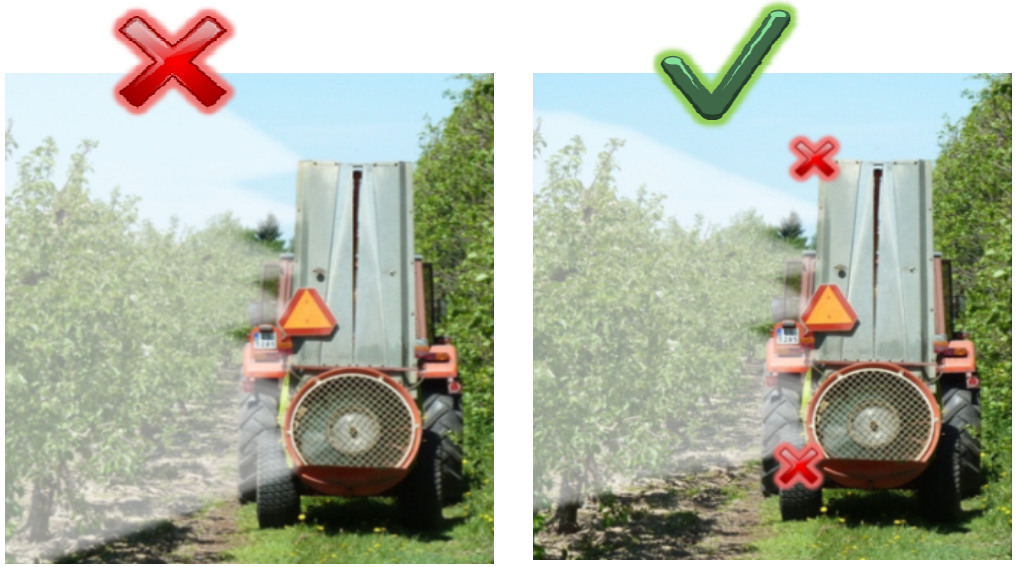
III. EQUIPMENT & METHODS

Operator dependent factors

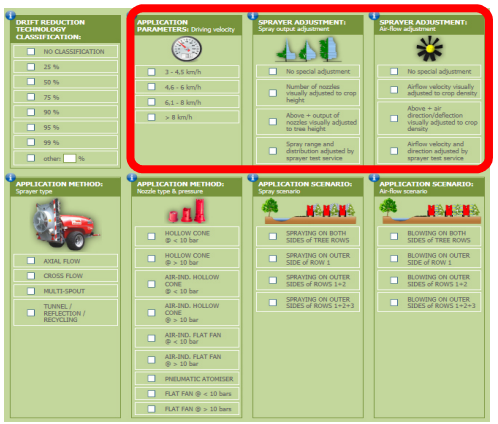
SPRAYER ADJUSTMENTS

- spray flow adjustment

NUMBER of NOZZLES



NOZZLE FLOWRATE



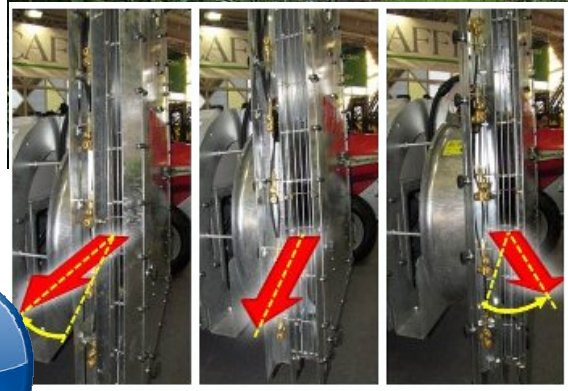
III. EQUIPMENT & METHODS

Operator dependent factors

SPRAYER ADJUSTMENTS

- air flow adjustment

MITIGATION



AIR VOLUME

AIR DIRECTION

III. EQUIPMENT & METHODS

Operator dependent factors

MITIGATION

- sprayer type

AXIAL FLOW

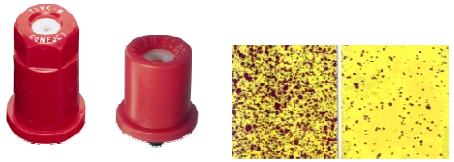
CROS-FLOW

MULTI-SPOUT

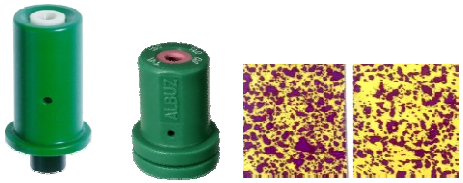
TUNNEL
REFLECTION
RECYCLING

- nozzle type

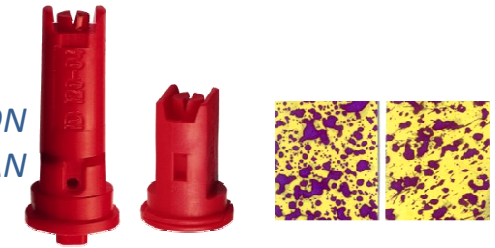
HOLLOW CONE



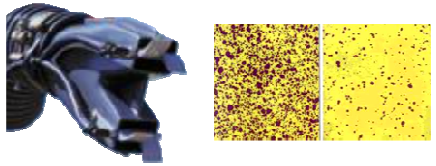
AIR-INDUCTION HOLLOW CONE



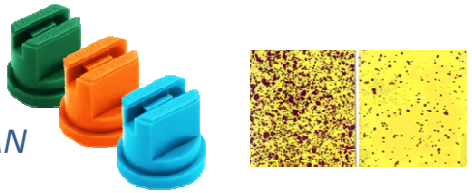
AIR-INDUCTION FLAT-FAN

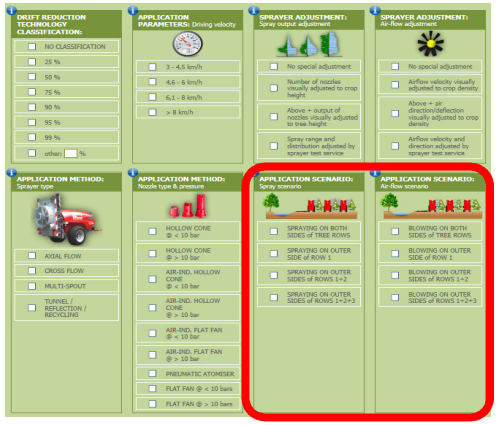


PNEUMATIC



FLAT-FAN





MITIGATION

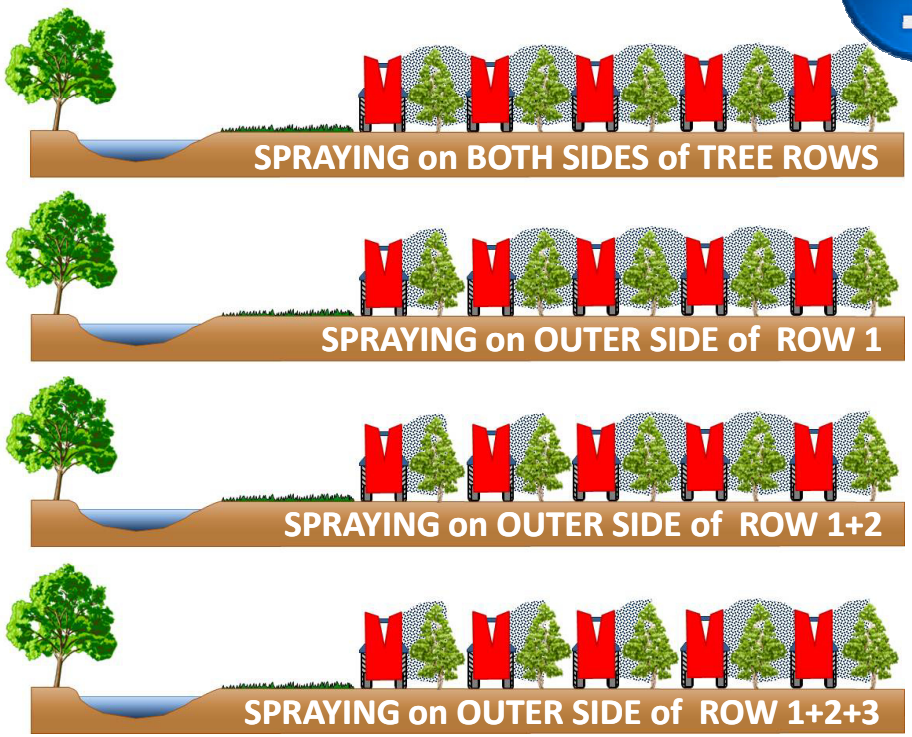
III. EQUIPMENT & METHODS

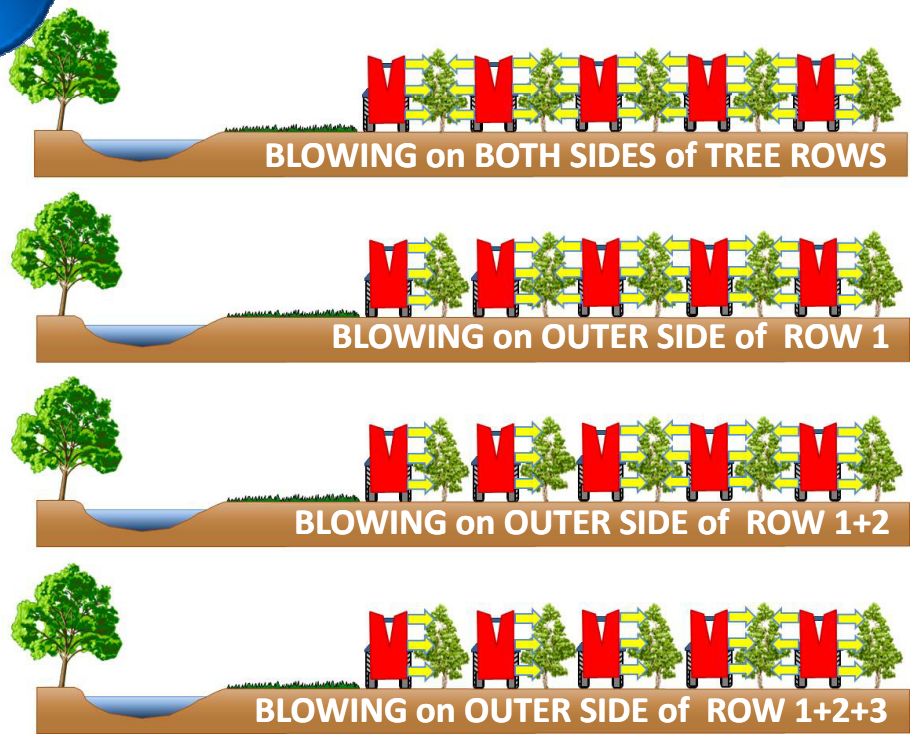
Operator dependent factors

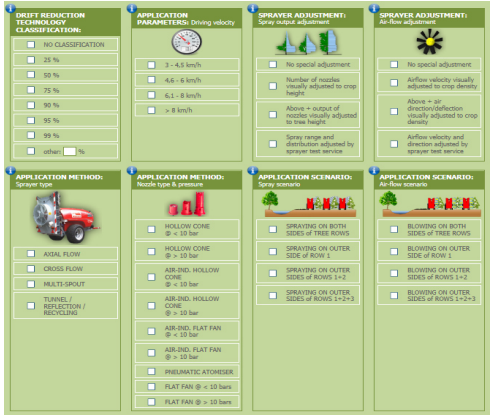
APPLICATION SCENARIO

(alterring application parameters when approaching water)

- spray scenario
- air-flow scenario



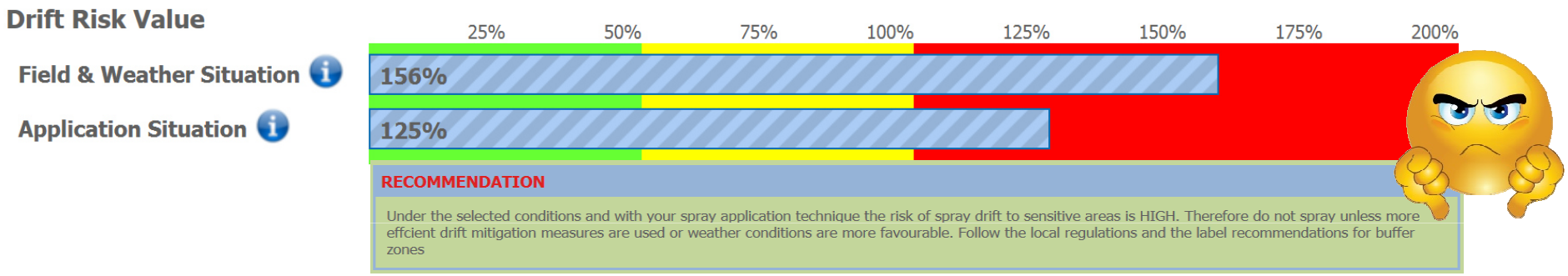


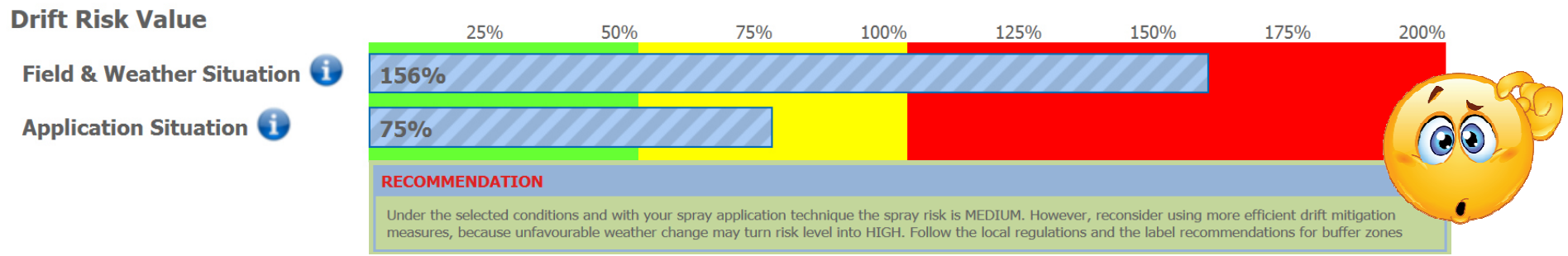


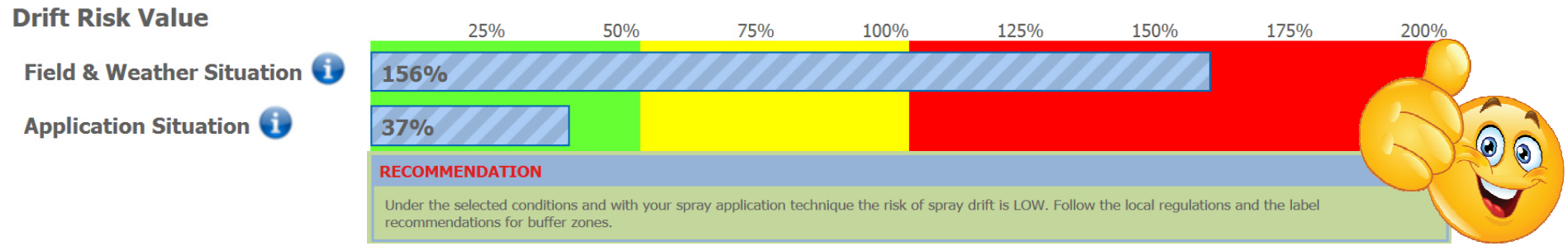
III. EQUIPMENT & METHODS

Operator dependent factors

RESULTS







DET application

POTENTIAL USERS:

- applicators
- advisors
- trainers
- teachers
- students

TOPPS
Water Protection

Thank you

and

enjoy using DET application ;-)

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