

**best**  
Practice,  
**better**  
Water Protection



## The TOPPS Project

TOPPS is a three-year multi-stakeholder project covering 15 European countries – it stands for **T**raining the **O**perators to prevent **P**ollution from **P**oint **S**ources. TOPPS is funded under the European Commission's Life Programme and by ECPA, the European Crop Protection Association.

## The TOPPS Objectives

TOPPS aims to reduce pesticide losses to water from point sources. The project defines best practice and promotes it through advice, training and demonstrations across Europe.

### Best Practice

TOPPS has identified four areas where improvements in operator practice can help keep pesticides out of water. The four areas are:

- **Transport**
- **Storage**
- **Before, during and after spraying, and**
- **Waste/remnant management**

## The TOPPS Tools

The tools that accompany and support the programme are:

- European-wide network of experts
- Communication database – [www.TOPPS-life.org](http://www.TOPPS-life.org)
- Publications
- Training material
- Workshops/trainings
- Demonstration stands
- 10 demonstration farms
- 6 pilot areas

[www.TOPPS-life.org](http://www.TOPPS-life.org)

## Keeping water clean matters

Used and handled correctly, pesticides pose no unacceptable risks to water. But just a few drops of spilt concentrated pesticide can break drinking water and environmental quality standards.

### Just think:

- Research has shown that a significant proportion of pesticides reaching water come from point sources
- Point source losses are mainly related to the filling, cleaning and storage of spray equipment and the disposal of waste/remnants
- These losses can largely be avoided through the adoption of best practice

**Following a few simple rules can help stop pesticides reaching water. Whenever you are using pesticides think about the steps you need to take to protect water.**

Start now by reading from here!

 **Protect our water**  
➤ **Keep it clean!**

 **Protect your crop**  
➤ **Avoid crop damage!**

 **Protect your livelihood**  
➤ **Fulfil environmental requirements and make them work to your advantage!**

 **Protect your solutions**  
➤ **Help keep a range of pesticides available!**

**Best practice = better water protection!**

## Following the correct procedures will help prevent pesticides reaching water

- Transport
- Storage
- Management before, during and after spraying
- Waste/remnant management

### Transport

#### Plan your transport

- Use the delivery services of your supplier
- Use a loading area adapted to retain spills
- Carry a mobile phone and emergency telephone numbers in case of an accident
- In case of a spill have absorbent materials to hand (wood shavings, sawdust, cat litter)

### Storage

#### Store pesticides in a fire-proof storeroom sited well away from water

- Store plant protection products in a lockable, clearly marked and bunded place (i.e. a place where spills can be contained)
- Have emergency procedures and materials in place: emergency telephone numbers, fire extinguisher, absorbent material
- Retain and safely dispose of all spills immediately



Best practice = better water protection!

### Before spraying

#### Think before spraying:

Use a crop protection management plan to identify any risks to water from your activities and ensure operators receive regular refresher training through membership of the National Register of Sprayer Operators (NRoSO).

#### Products and planning

- Decide which plant protection products are to be applied
- Identify sensitive areas and observe buffer zones
- Plan mixing, loading and cleaning sites in advance
- Read the product labels carefully



Calculate the amounts of pesticide and water needed. Avoid leftover spray by ensuring you calculate the exact volume of spray solution required for the job. If in doubt underestimate the volume.

#### Equipment

- Set up and calibrate sprayer and ensure sprayer is tested annually under the National Sprayer Testing Scheme (NSTS)
- Check the sprayer for leaks or drips. Ensure nozzle non-drip valves are working correctly



Best practice = better water protection!

## Before spraying

### Travelling to the field

- Plan the best way to get to the field without posing risks to water. Avoid fording watercourses
- Switch off pumps while travelling. Ensure all couplings are secured

### Water

- Make sure that the water supply and spray solution are never connected. Use buffer tanks or double check valves to protect mains water



- Fit alarms and cut-off valves to stop sprayer over-filling



- Never leave a sprayer unattended when filling

## Mix and load carefully

### Filling requires extra care

- Filling sprayers with undiluted pesticides poses significant risks to water
- Site all filling areas well away from water
- Take extra care when pouring pesticides to avoid tiny drips and splashes
- Use induction bowls and closed transfer systems wherever practical
- Take extra care when filling on concrete, spilt or splashed pesticides can quickly run-off into drains and watercourses

**Best practice = better water protection!**

## Mix and load carefully

You can either fill in the farmyard or in the field:

### Filling in the farmyard

- Farmyard filling needs to be carefully managed
- Either use a plastic tray or portable bund which enables you to collect any spills
- Or fill in a bunded area where spills and washings can be collected for treatment in a lined biobed or via a waste disposal contractor
- Have absorbent materials ready to clean up any spills immediately



### Filling in the field

- Use a secure lockable transport box so that products are kept safe and secure
- Ensure filling area is sited at least 10 m away from any ditch or watercourse
- Vary the location selected for mixing and loading in the field
- Use a spill tray to collect any accidental spills or splashes



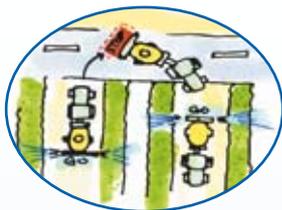
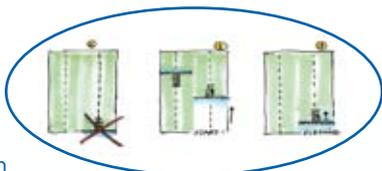
**Best practice = better water protection!**

## During spraying

### Avoid all possible contamination!

#### Avoid direct contamination

- Do not spray directly onto equipment
- Only spray when the sprayer is moving
- Shut off sprayer when turning
- If you notice any leaks: stop spraying immediately and repair
- Do not overspray water-courses, wells and drains



#### Avoid drift

- Do not overspray buffer zones
- Select proper nozzles according to the product label and the target. Wherever practical, use drift-reducing nozzles

#### Avoid run-off

- Do not spray when there is a risk of surface run-off
- Do not spray on frozen or water-logged soil. Spray headlands last to avoid driving over sprayed ground

#### Tip:

When buying a new sprayer make sure it has an NSTS certificate and that the design minimises the volume of the non-sprayable solution.

**Best practice = better water protection!**

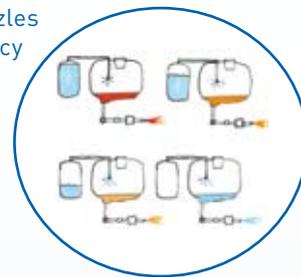
## After spraying

### Have water with you for cleaning inside and outside of the sprayer and tank.

Follow manufacturers instructions and ensure the sprayer is thoroughly cleaned. The tank may require rinsing up to three times.

#### Inside

- Fit internal tank rinsing nozzles to increase cleaning efficiency
- Dilute the remnant spray with water and spray the solution over the area of the field where you started to spray
- Dilute the remnant solution two more times and spray it out again
- Only take the diluted and non-sprayable portion of spray solution back to your farm



#### Outside

- Use spray lance to clean spraying equipment in the field
- Clean mud from tyres before leaving the field
- Clean sprayer every day to avoid build-up of deposits. Pay special attention to the booms and the back of the spray tank as most deposits collect here
- If you clean the sprayer in your farmyard, select a place where rinse-water is collected for treatment or disposal
- After use, park your sprayer securely under a roof to protect it from rain so that no pesticide residues are washed off into drains or watercourses



**Best practice = better water protection!**

## Waste/remnant management

### Container disposal

- Follow label recommendations or other instructions on disposal procedure
- Participate in authorised recycling schemes. Use [www.wasterecycling.org.uk](http://www.wasterecycling.org.uk) to find suitable contractors
- Never burn or bury packages



### Unwanted stocks

- Separate out-of-date plant protection products from the others and contact an approved waste disposal contractor
- Never wash leftover products down the drain, and never bury them



### Leftover spray solution

- Reuse diluted plant protection product liquid if legally permitted
- Store diluted plant protection product liquid safely
- Never dump liquids or solids containing plant protection products where they can reach water

### Solid remnants (e.g. as a result of processing diluted liquids/cleaning of filters/managing pills)

- Biodegradable solid remnants can be stored for further degradation if legally permitted and adequately secured
- Non-biodegradable remnants must be disposed of as waste

**Your best practice ensures better water protection! Thank you!**

## Useful Contact Information

**Police/Fire/Ambulance** 999

**NHS Direct** 0845 4647

**Environment Agency Hotline** 0800 80 70 60  
(UK wide for all environmental incidents)

Environment Agency General Enquiries: 08708 506 506  
[www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)

Scottish Environment Protection Agency contact details in phone book or [www.sepa.org.uk](http://www.sepa.org.uk)

Crop Protection Association – [www.cropppprotection.org.uk](http://www.cropppprotection.org.uk)

Pesticide Safety Directorate – [www.pesticides.gov.uk](http://www.pesticides.gov.uk)

National Sprayer Testing Scheme – [www.nsts.org.uk](http://www.nsts.org.uk)

National Register of Sprayer Operators – [www.nroso.org.uk](http://www.nroso.org.uk)

The Voluntary Initiative – [www.voluntaryinitiative.org.uk](http://www.voluntaryinitiative.org.uk)

Biobeds Information – [www.biobeds.info](http://www.biobeds.info)

Waste/remnant disposal – [www.wasterecycling.org.uk](http://www.wasterecycling.org.uk)

## Farm Location Details

**Contact Name:** \_\_\_\_\_

**Telephone:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Postcode** \_\_\_\_\_

**Map Ref Sheet No:** \_\_\_\_\_

**East:** \_\_\_\_\_ **North:** \_\_\_\_\_

## Local Telephone Numbers

**Hospital w A&E** \_\_\_\_\_

**HSE** \_\_\_\_\_

**Doctor** \_\_\_\_\_

**Police** \_\_\_\_\_

**Water** \_\_\_\_\_

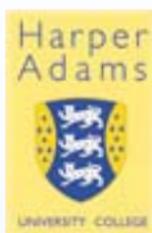
**Countryside Watch** \_\_\_\_\_

**Waste Disposal** \_\_\_\_\_



### **Crop Protection Association**

20 Culley Court,  
Orton Southgate  
Peterborough, PE2 6WA  
[www.cropprotection.org.uk](http://www.cropprotection.org.uk)



### **Harper Adams University College**

Egmond, Newport,  
Shropshire TF10 8NB  
[www.harper-adams.ac.uk](http://www.harper-adams.ac.uk)



### **HGCA**

Caledonia House, 223 Pentonville Road  
London, N1 9HY  
[www.hgca.com](http://www.hgca.com)



### **Potato Council**

4300 Nash Court, John Smith Drive  
Oxford Business Park South,  
Oxford OX4 2RT  
[www.potato.org.uk](http://www.potato.org.uk)



### **The Voluntary Initiative**

[www.voluntaryinitiative.org.uk](http://www.voluntaryinitiative.org.uk)

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