

# TOPPS Training Events – Reduction of PPP Losses to Water

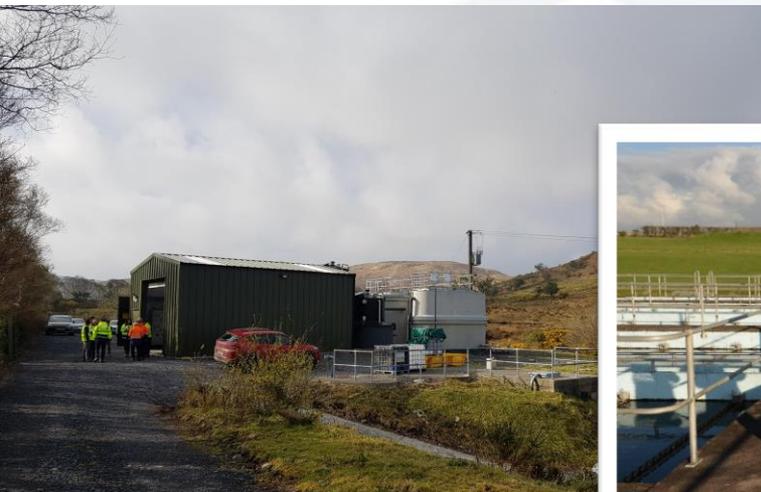


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**Inspector, Drinking Water Enforcement**

**2019: Kildalton 29<sup>th</sup> May, Pallaskenry 30<sup>th</sup> May**

# Role of the EPA

- Office of Environmental Enforcement
- Drinking Water (DW) Quality Regulator since 2007
  - Audits of DW supplies
  - Supervise investigations into non-compliances for all parameters
  - Can Direct Irish Water to carry out specific actions
  - Remedial Action List (RAL) of priority supplies
  - Publish annual reports on DW quality for public and private supplies
  - Develop national enforcement policy, input to EU policy
  - Publish technical guidance
  - And more...

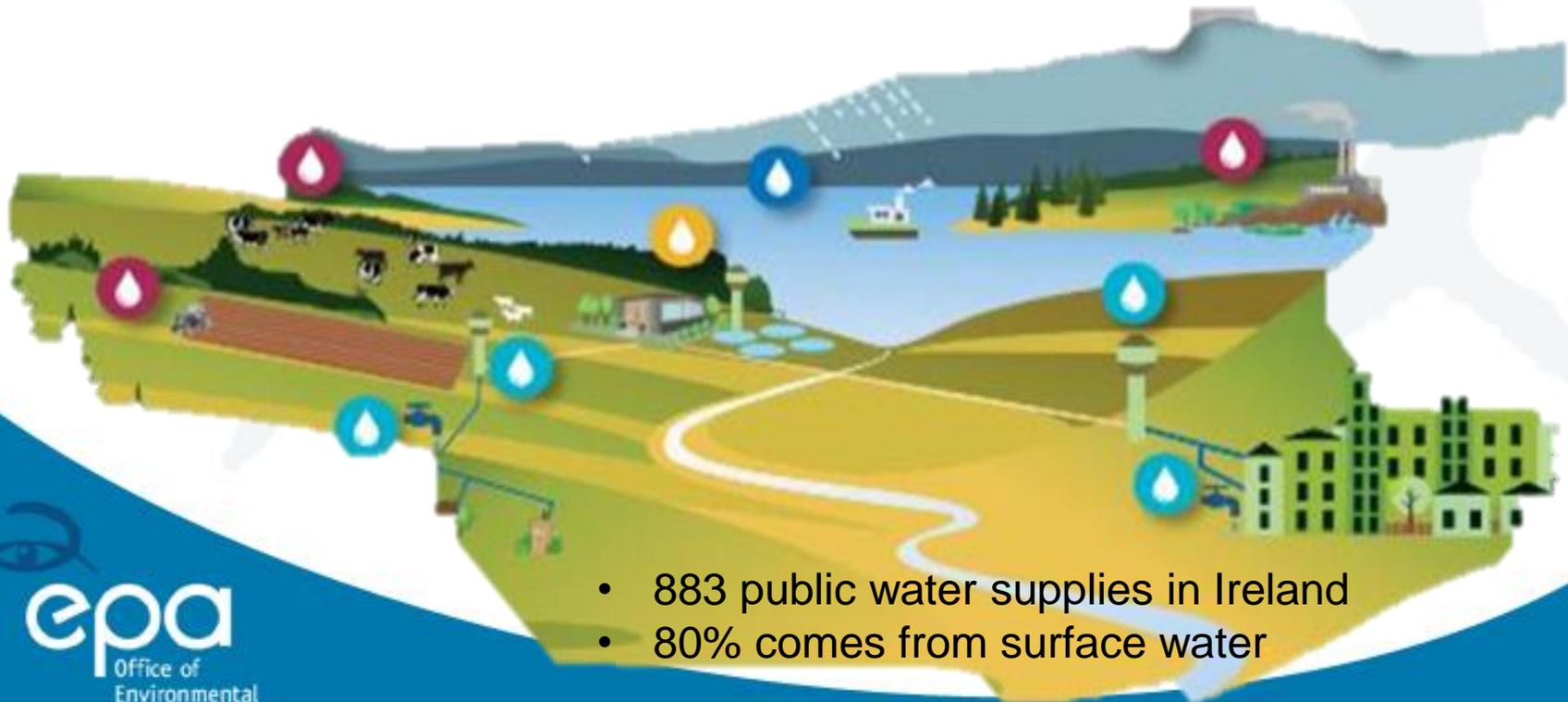


# Losses of PPP to water – first principles

source

pathway

receptor



- 883 public water supplies in Ireland
- 80% comes from surface water

# Pesticides: difficult to remove by treatment



Rivers/  
lakes/  
groundwaters



Distribution  
networks



# Limits for pesticides in drinking water

- The European Union (Drinking Water) Regulations 2014 (S.I. No. 122 of 2014) *as amended* sets limits for pesticides in DW:

|   |           |
|---|-----------|
| Pesticides  | 0.1 µg/l  |
| Pesticides Total                                    | 0.5 µg/l  |
| Aldrin, Dieldrin, Heptachlor and Heptachlor Epoxide | 0.03 µg/l |

- EU limits are not health based.

- WHO Guideline Values (GLV) Health Based Value (HBV) – set for some but not all pesticides.

EU limits (above) are far more stringent than the WHO values.

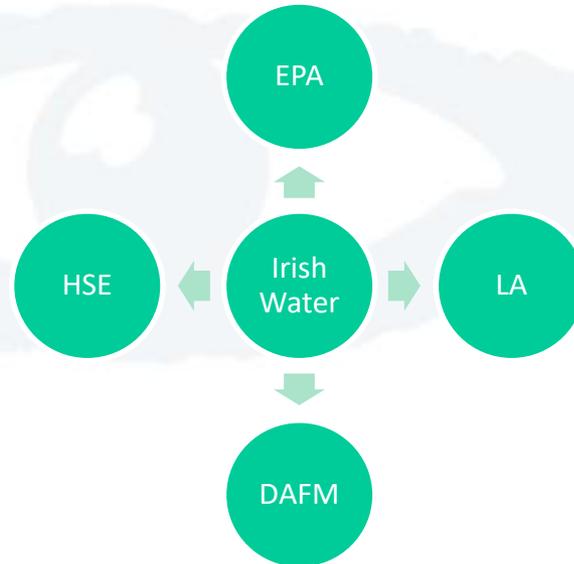
Example: MCPA WHO HBV is 700 µg/l: 7000 times the EU limit of 0.1 µg/l

# Irish Water: monitoring at the tap

| Irish Water Baseline Pesticides Monitoring (21)         |               |
|---|---------------|
| 2,4-D   | Isoproturon   |
| Atrazine  | Linuron       |
| Bentazone   | MCPA          |
| Clopyralid  | Mecoprop      |
| Chlorfenvinphos   | Metoldehyde   |
| Cypermethrin  | Pendimethalin |
| Dichlobenil   | Propyzamide   |
| Diflufenican  | Simazine      |
| Dichlorprop   | Glyphosate    |
| Diuron  | Triclopyr     |
| 2,3,6 Trichlorobenzoic Acid                             |               |
| + 12 additional compounds based on historic detections. |               |

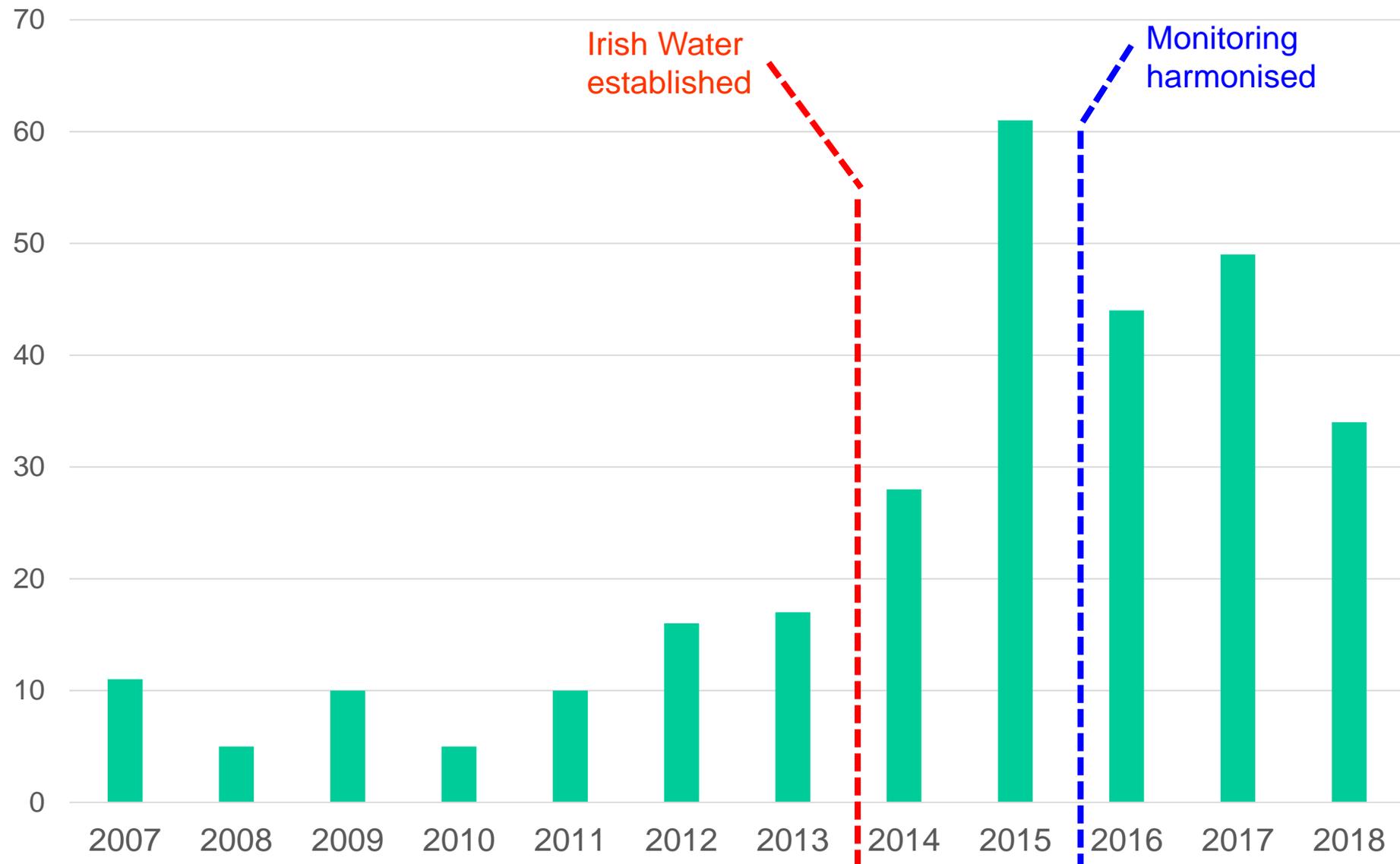
When Irish Water detects an exceedance, a procedure is followed:

- Notify EPA
- Consult with HSE
- Consult with Dept. Agriculture
- Work with Local Authority- investigate & resample



IW only monitor public supplies.  
Most private wells are not monitored for pesticides.

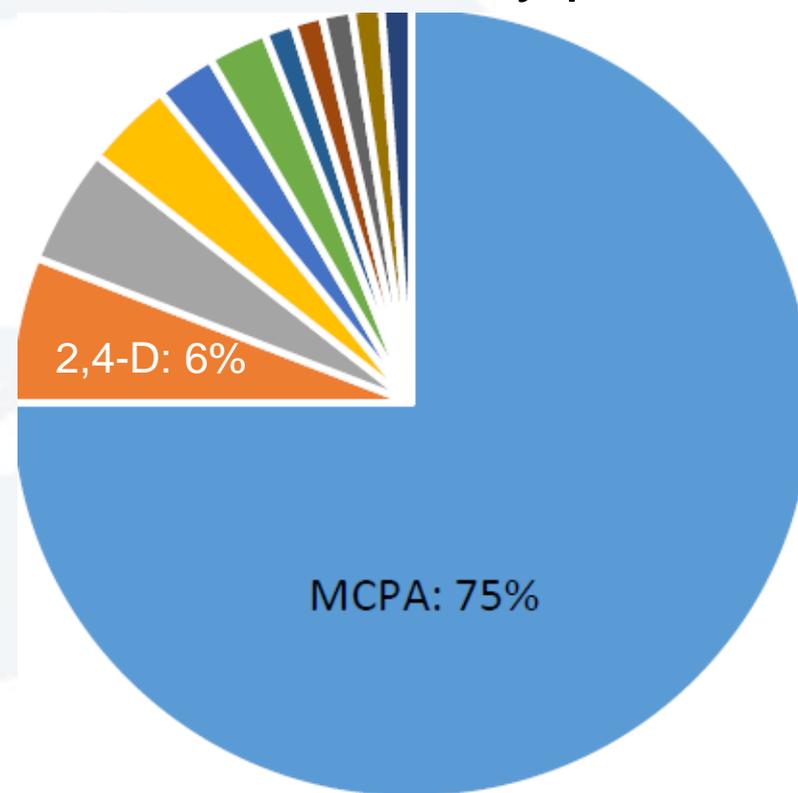
# Number of public supplies with pesticide exceedances



## What is being detected in DW

| Pesticide        | 2018: No. of Exceedances |  |
|------------------|--------------------------|--|
| MCPA             | 63                       |  |
| 2,4-D            | 5                        |  |
| Bentazone        | 4                        |  |
| Glyphosate       | 3                        |  |
| Fluroxypyr       | 2                        |  |
| Mecoprop         | 2                        |  |
| Clopyralid       | 1                        |  |
| Metaldehyde      | 1                        |  |
| Picloram         | 1                        |  |
| Triclopyr        | 1                        |  |
| Pesticides Total | 1                        |  |

2018 breakdown by pesticide



# MCPA - 2-methyl-4-chlorophenoxyacetic acid

- Broadleaf herbicide used to control weeds in grassland and cereal crops.
- Effective and commonly used against rushes (*Juncus effuses*)
- Widely used across many sectors: agriculture; amenity use (parks, sports grounds, golf courses etc.), amateur use (gardens).
- Highly soluble in water
- $K_{oc}$  of 74; weakly adsorbed to soil or suspended matter
- $DT_{50}$  (half life) of approximately 25 days (depending on conditions...can be as low as 10 days) in soil but can remain in environment for a significant duration - Recent Teagasc research: negligible breakdown in anaerobic conditions



# EPA enforcement approach

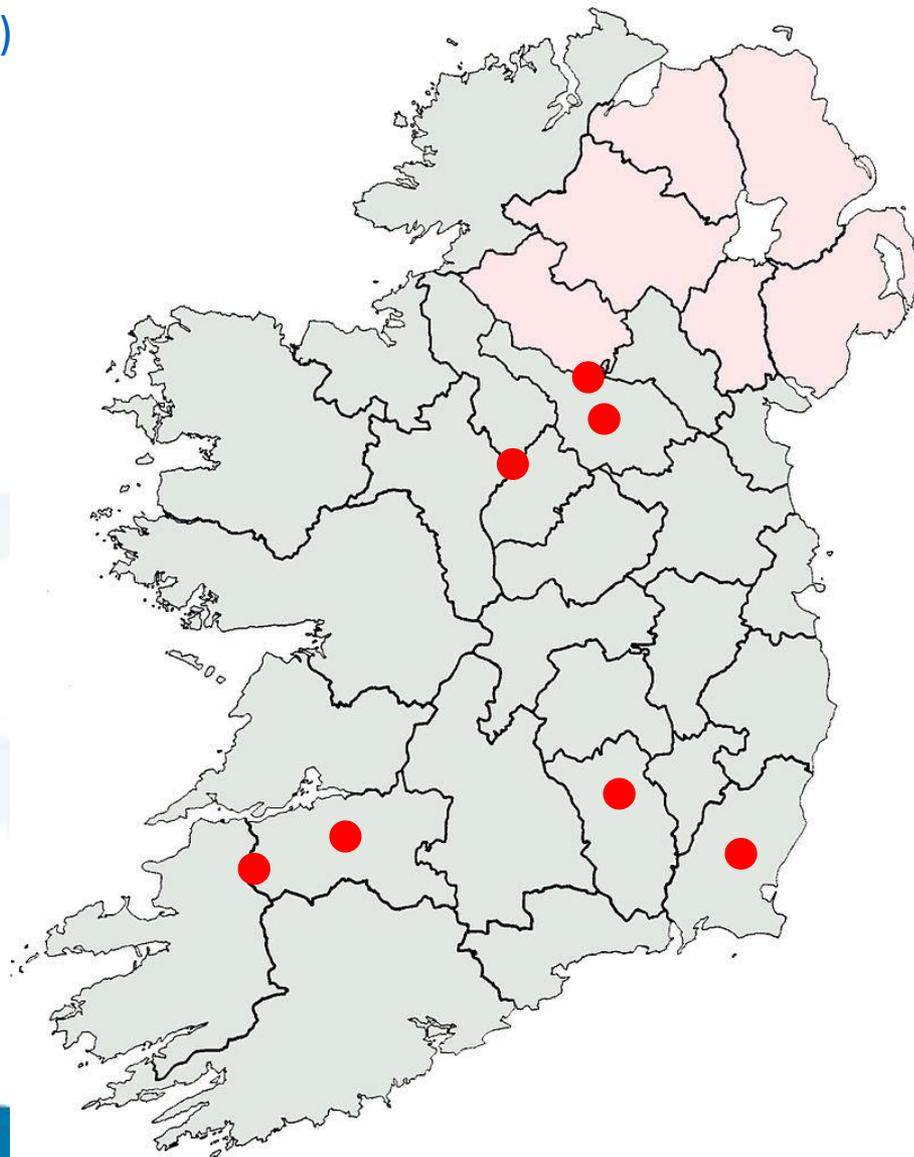
- EPA adopts a 2-tier classification system:

| Classification | Definition   | EPA Requirements   |
|----------------|--|--|
| <b>WATCH</b>   | Supplies with failures in 1, 2 or 3 calendar months in a calendar year | IW to monitor at least monthly, Apr-Nov at a minimum                                       |
| <b>ACT</b>     | Supplies with failures in 4 or more calendar months                    | IW to monitor as above <u>and</u> undertake actions towards returning supply to compliance |

# Current picture

- 37 open EPA investigation files (currently)
  - 30 supplies in the WATCH category
  - 7 supplies in the ACT category

| ACT Supply (Source) ●                  | Issue                          |
|--|--------------------------------|
| Longford Central (L. Forbes)           | MCPA                           |
| Troyswood, Co. Kilkenny (R. Nore)      | MCPA<br>(1 x 2-4D)             |
| Abbeyfeale, Co. Limerick (R. Feale)    | MCPA                           |
| Newcastle West, Co. Limerick (R. Deel) | MCPA, 2,4D, MCPP<br>Clopyralid |
| Cavan RWSS (L. Acanon)                 | MCPA                           |
| Belturbet, Co. Cavan (R. Erne)         | MCPA                           |
| Clonroche, Co. Wexford (Groundwater)   | Bentazone                      |



- All 7 are on EPA Remedial Action List and subject to Directions.
- APHA: catchment monitoring in Longford, Limerick (x2) & Kilkenny.

# Where do we start?

Many factors influence fate of pesticides in the environment, and potential for detections in source waters, including:

What control/  
awareness /  
influence can  
be exerted over  
these to effect  
improvement?



level of water table

weather

correct equipment

secure product  
storage

trained professional  
user?

Awareness re:  
potential impacts

adherence to safeguard  
zones and setback  
distances

rate of break-down  
in environment

rinsing / disposing of  
containers per guidance

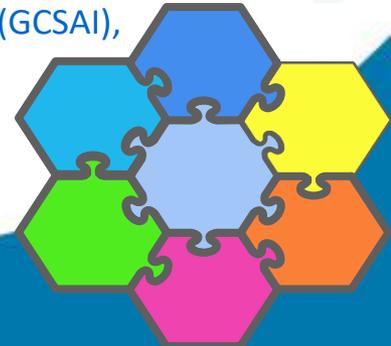
ground conditions

product storage/  
handling

etc...

# National Pesticides in Drinking Water Action Group

- Established in 2013 by EPA in response to 
- Now chaired by Department of Agriculture, Food and the Marine (DAFM)
- Aim: to provide a coordinated and collaborative approach to prevent the ongoing prevalence of pesticides in catchments used for the abstraction of drinking water
- Membership:
  - DAFM, EPA, HSE
  - Irish Water, City and County Manager's Association (CCMA) Irish Water, LAWPRO, National Federation of Group Water Schemes (NFGWS)
  - Teagasc
  - IFA, ICMSA,
  - Animal and Plant Health Association (APHA), Federation of Agrochemical Retail Merchants (FARM),
  - Golfing Union of Ireland (GUI), Golf Course Superintendents Association of Ireland (GCSAI),
  - Hardware Association of Ireland
  - Association of Landscape Contractors of Ireland (ALCI)



# NPDWAG leaflets - collaboration



## Protecting Drinking Water from Pesticides Advice for Farmers and Other Professional Users

Promoting best practice in the use of pesticides to protect drinking water



## Protecting Drinking Water from Pesticides Herbicide Use in Grassland

Promoting best practice in the use of pesticides to protect drinking water



## Protecting Drinking Water from Pesticides Advice for Gardeners and Household Users

Promoting best practice in the use of pesticides to protect drinking water

Examples of pesticide products commonly used in gardens and around the house include weedkillers, insecticides, fungicides, rodent poisons and slug pellets.

It is essential to take great care when storing, handling or using any pesticide as even a trace amount going down a drain or entering a water course can end up in drinking water.

Certain levels of weeds and insects are important to the natural environment. Consider whether you need to use the pesticide. Is the organism really causing lasting damage?

### DOs

- DO** recycle empty containers in your recycling bin or at a Local Authority Civic Amenity Site. If unsure about any aspect of container disposal, enquire at purchase outlet.
- DO** dispose of unused product properly at a Civic Amenity Site or at a mobile collection as organised by some Local Authorities. Contact your Local Authority for further details.
- DO** store all pesticides in a dry, secure location which cannot result in accidental leaks to drains, wells or water courses - and out of children's reach.
- DO** read and follow the instructions for use carefully to get the best results.
- DO** take extra care to prevent entry to drains, particularly if applying pesticides to hard surfaces such as paths or driveways.

### DON'Ts

- DON'T** dispose of unused pesticide or rinse water from pesticide containers down a drain or sink. Container washings can be applied to the treated area. Check with your local Civic Amenity Site if you have unused product for disposal.
- DON'T** apply pesticides if it is raining, if the area being treated is wet, or if rain is forecast.
- DON'T** use pesticides near drains, wells or water courses such as rivers, streams or lakes.



For further information visit [www.pcs.agriculture.gov.ie](http://www.pcs.agriculture.gov.ie), [www.teagasc.ie](http://www.teagasc.ie) or [www.epa.ie](http://www.epa.ie)

Environmental  
Enforcement

## What we need to see:

- Engaged stakeholders - especially pesticide users
  - Inform: there is a problem, action is needed
  - Reassure: products are authorised for use
  - Appeal: to practice responsible use of pesticides as part of an integrated pest management (IPM) approach.
- A sustained culture of careful handling and application of all pesticides products.
  - **Ultimate Objective:**
    - Reduction in exceedances in drinking water...  
no supplies with persistent exceedances.

Thank you for your attention.  
Questions?

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