



An Roinn Talmhaíochta,  
Bia agus Mara  
Department of Agriculture,  
Food and the Marine



# Regulation and Water Protection

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Pesticide Controls Division  
28-30<sup>th</sup> May 2019



# Overview

**PPP legislation**  
**Sustainable Use Directive (SUD)**  
**Drinking water**  
**Minimising risk**

- Buffer zones
- Safeguard zones

**Integrated Pest Management**  
**Specific measures**  
**Storage & Record Keeping**  
**Application equipment**

- Weed wipers

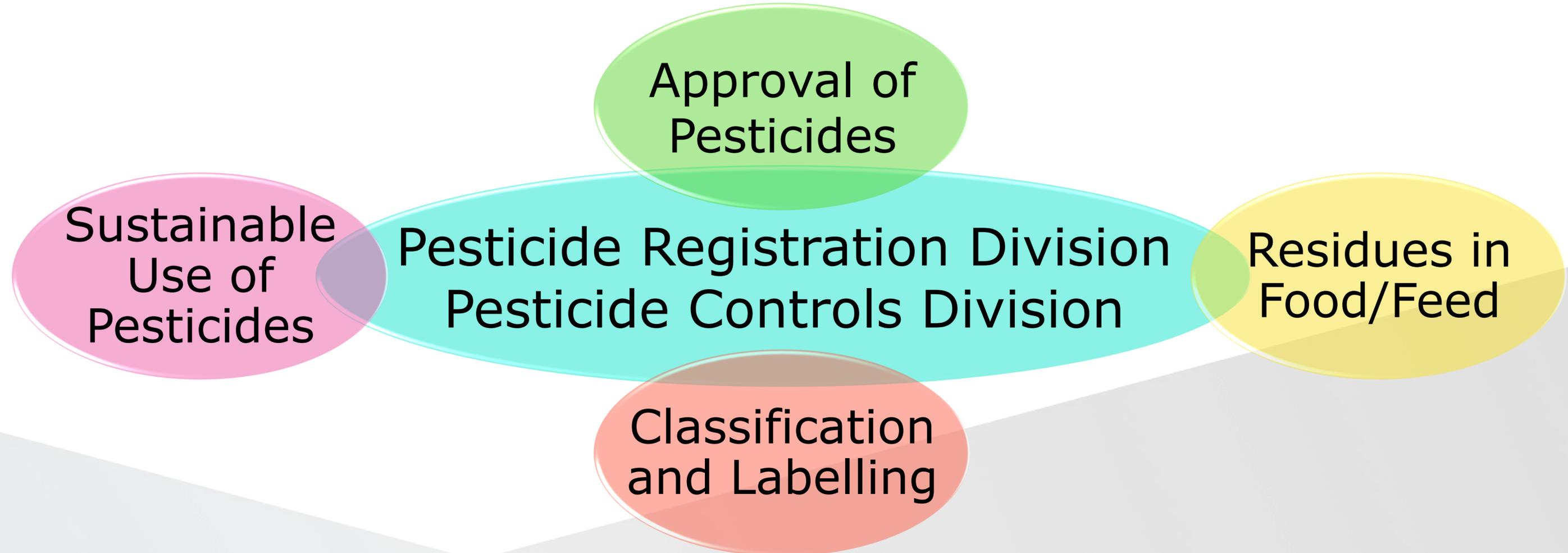
**Water protection**  
**Inspections**



# Regulatory framework



DAFM is the Competent Authority for regulation of pesticides in Ireland



# EU thematic strategy (PPPs)



Authorisation regulation  
1107/2009/EC

**PRE-MARKET**

Sustainable Use Directive 128/2009/EC  
Machinery Directive 127/2009/EC

**USE**

Pesticide residues  
Waste legislation  
Water Framework Directive

**DISPOSAL/DEGREDDATION**

**Statistics regulation**

**Residue monitoring**

**Water monitoring**

**HAZARD**

Something with the potential to cause harm.



DRIVING ON A ROAD



SHAVING YOUR FACE

**VS.**

**RISK**

The chance you will be harmed.



DRIVING IN A BLIZZARD.



SHAVING A BEAR

# Sustainable Use Directive



Revised National Action Plan

[https://ec.europa.eu/food/plant/pesticides/sustainable\\_use\\_pesticides/nap\\_en#ireland](https://ec.europa.eu/food/plant/pesticides/sustainable_use_pesticides/nap_en#ireland)

Information on protection of water – pp. 23-24



# Drinking water



0.1 microgram/L = 0.1 ppb  
(1 part in 10 billion)



Equivalent to one drop in an Olympic-sized swimming pool (375,000 litres); 1 stem in 111,000 hay bales, 1 baked bean in 21 million cans, 1 second in 317 years

Not a health-based standard  
(Political decision from 1980 to use 0.1 ppb as a surrogate for zero.)



# Why is there an issue?



One foil seal contains enough pesticide to breach 0.1 microgram/L level along **30 km** of a typical stream





# What is the issue?



Multiple exceedances of legal limit for **MCPA** in drinking water sources



Drinking water standard for individual pesticides = **0.1 microgram/L**

## Focus on MCPA and rush control

**BEWARE!** Spraying rushes can very easily lead to breaches of the drinking water standard for pesticides, particularly if using MCPA products.

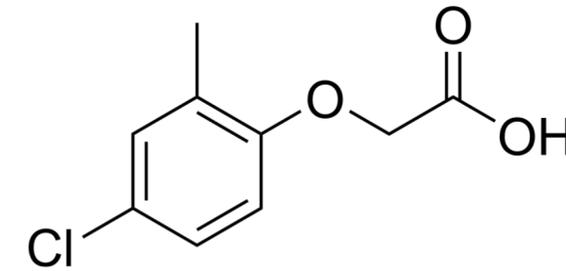
### Why?

- MCPA is water soluble and takes several weeks to break down.
- Rushes thrive in poorly drained areas (with a water table near the surface) which are prone to runoff to nearby water bodies.

### What to do?

- Use non-chemical control methods e.g. cutting, drainage, sward improvement.
- If spraying, target only the rush affected areas.
- If spraying, cut rushes one month before or one month after spraying to improve the effect of the spray.
- Consider weed wiping with an appropriate herbicide as a rush control option.

# Minimising the risk



MCPA

(4-chloro-2-methylphenoxy) acetic acid

Be water aware with MCPA!

**NEVER APPLY THROUGH A WEEDWIPER**





# Buffer zones

- No-spray strip of a specified minimum width between the edge of a water body and the edge of the treated area.
- **Legal requirement to comply with buffer zone specified on product label.**
- Applies to all types of surface water body, e.g. ditches, streams, ponds, rivers and lakes.



# Safeguard zones



## ! Safeguard Zones !

Statutory 'no-use' zones (called safeguard zones) apply around drinking water abstraction points

Your Local Authority or The National Federation of Group Water Schemes can advise on this.

**Safeguard zones CANNOT be adjusted**

# Specific measures to protect Aquatic Environment and Drinking Water



## Safeguard zones

around water abstraction points (including wells )

200m	500 people (>100 m <sup>3</sup> )
100m	50-500 people (>10 m <sup>3</sup> )
25m	10-50 people (1-10 m <sup>3</sup> )
5m	10 or less people (<1 m <sup>3</sup> )

15m Landscape feature  
(karst area, sink hole or collapse feature)

## Buffer Zones

1m-50m Particular to the product  
Aquatic/NTA/NTP



# MCPA measures



Reduction in application rate for 'straight' MCPA products.

Extended prohibited use period from end of September until beginning of March.

Mandatory requirement for a 5 m buffer zone.

Mandatory product stewardship scheme requiring raw water monitoring of phenoxyacids in priority areas and promotion of best practice standards nationally.

Video on best practice for using MCPA for rush control.

<https://youtu.be/xQqtZ7jifUs>

(Irish Water, Teagasc, DAFM)



# Advice leaflets - Protecting Drinking Water from Pesticides



## Protecting Drinking Water from Pesticides - Leaflet Series

Herbicide Use in Grassland (including MCPA).

Advice for Farmers and other Professional Users.

Advice for Gardeners and Household Users.

General awareness-raising poster.

[www.epa.ie/water/dw/protectingdrinkingwatersupplies/](http://www.epa.ie/water/dw/protectingdrinkingwatersupplies/)

## Focus on MCPA and rush control

**BEWARE!** Spraying rushes can very easily lead to breaches of the drinking water standard for pesticides, particularly if using MCPA products.

### Why?

- MCPA is water soluble and takes several weeks to break down.
- Rushes thrive in poorly drained areas (with a water table near the surface) which are prone to runoff to nearby water bodies.

### What to do?

- Use non-chemical control methods e.g. cutting, drainage, sward improvement.
- If spraying, target only the rush affected areas.
- If spraying, cut rushes one month before or one month after spraying to improve the effect of the spray.
- Consider weed wiping with an appropriate herbicide as a rush control option.

## REMEMBER!

- A **SINGLE** drop of pesticide lost to a water body such as a typical small stream (1 metres wide, 0.3 metres deep), for example, can be enough to breach the legal limit for pesticides in drinking water of 0.1 part per billion along 30 km of its length.
- Always read and follow the product label.
- Be aware of how near water bodies (ditches, streams, ponds, rivers, lakes, etc.), drains or wells are to where you are working.
- Find out if the treatment area is in the vicinity of a drinking water abstraction point or well.

**For further information** on related topics such as container storage, triple rinsing, Integrated Pest Management or a list of approved Pesticide Advisors 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)



A SINGLE drop of herbicide can breach the drinking water limit in a small stream for 30 km



# Protecting Drinking Water from Pesticides

## Herbicide Use in Grassland

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



## Herbicides\* and drinking water

Drinking water monitoring results for Ireland show that a number of herbicides commonly used on grassland, such as MCPA, are being detected more frequently in recent years. Careless storage, handling or use of pesticides can easily cause breaches of the legal limit for pesticides in drinking water.

It is essential to take great care and follow best practice procedures when using any pesticide and particularly so in the case of herbicides used on grassland.

## How do herbicides get into drinking water?

Herbicides can enter water bodies from:

- **Point sources** (mainly in the farm or farmyard) – leaks from storage areas; spills or drips from handling operations such as mixing, filling and washing; or
- **Diffuse sources** (mainly in the field) – inputs arising during or after application from processes such as spray drift, runoff and drainage.

## Weeds in Grassland

Low levels of weeds do not affect grass production and are beneficial to the environment.

A vigorously growing grass sward can out-compete weeds and prevent new weeds growing.

Don't underestimate basic grassland husbandry such as lime, fertiliser, topping or reseeding as weed control measures.

Spraying at the right time doubles the effect of the spray.

## DOs when using herbicides:

- DO** read the product label instructions carefully and plan the treatment in advance, taking care to ensure strict compliance with the specified conditions of use. Follow all health and safety instructions.
- DO** inform yourself of the location of all nearby water bodies (ditches, streams, ponds, rivers, lakes and springs).
- DO** find out if any groundwater body or surface water body in your locality is used as a drinking water source and, if so, the location of the nearest abstraction point. Ensure compliance with the safeguard (no-use) zones around drinking water abstraction points.
- DO** ensure that pesticide products are stored in a secure, dry area which cannot result in accidental leaks or spills. Empty, triple-rinsed containers should be disposed of in accordance with the Good Practice Guide for Empty Pesticide Containers.
- DO** ensure that application equipment is properly calibrated and in good working order.
- DO** take every precaution during mixing and preparation to avoid spills and drips. Minimise water volumes (rain and washings) on the handling area.
- DO** consider using drift-reducing nozzles if spraying. Keep the spray boom as low as possible to the ground and use the coarsest appropriate spray quality.
- DO** clean and wash down the sprayer at the end of the day, preferably in the field and well away from water bodies or open drains. Tank washings should be sprayed onto the previously sprayed area, on a section far away from any water body, observing the maximum dose for that area.

\* Herbicides are one of a number of pest control agents encompassed by the broad term 'pesticides'. The term also covers various other agents such as fungicides, insecticides, seed dressings and rodenticides.

## DON'Ts when using herbicides:

- DON'T** perform handling operations (filling, mixing or washing the sprayer) near water bodies, open drains or well heads. Maintain a distance of at least 10 metres and preferably 50 metres, where possible.
- DON'T** fill the sprayer directly from a water body.
- DON'T** spray if the grass is wet or if heavy rain is forecast within 48 hours after application. **DON'T** spray during windy conditions.
- DON'T** spray near open drains, wells or springs.
- DON'T** spray on waterlogged or poorly draining soils that slope steeply towards a water body, drain, well or on any other vulnerable area that leads directly to water.
- DON'T** discard sprayer washings down a drain or onto an area from which they can readily enter a water body.



## ! Safeguard Zones !

Statutory 'no-use' zones (called safeguard zones) apply around drinking water abstraction points, ranging from 5 metres to 200 metres depending on the size of the supply. Your Local Authority or The National Federation of Group Water Schemes can advise on this.

# What is IPM?



Integrated Pest Management (IPM) is a sustainable approach to manage pests that combines biological, cultural, physical and chemical tools in a way that minimizes economic, health, and environmental risks.

It relies on technical solutions to manage weeds, pests and diseases but also takes social, economic and environmental factors into account.

## Legal requirement SI 155 of 2012

**Top World Wheat Yields**  
(5-year average, 2013-2017)

	Yield (t/ha)	Production (1,000 t)
1. Ireland	9.88	653
2. New Zealand	9.11	429
3. Netherlands	8.77	1,240
4. Belgium-Luxembourg	8.58	1,938
5. United Kingdom	8.22	14,838
6. Germany	8	25,660
7. Denmark	7.65	4,630
8. France	6.94	37,662
20. Croatia	5.17	808
World Average	3.34	737,796
48. United States	3.14	55,915

Data source: U.S. Department of Agriculture/FAS @kannbwx

### Integrated pest management

14. A professional user shall apply the general principles of integrated pest management as set out in Annex III to the Directive and maintain records to demonstrate the application of such principles.

### Good plant protection practice

15. A professional user shall apply the principles of good plant protection practice as published by the Minister and maintain records to demonstrate the application of such principles.

# Integrated Pest Management



## Support documents

Guidance for the Office of Public Works (OPW) workers who use plant protection products.



 ***Straight A's for AMENITY*** 

10 easy steps towards responsible pesticide use in public and amenity and garden areas

1. Assess the need
2. Appraise the tools available & agree most suitable solution
3. Alleviate risks where possible
4. Await suitable conditions
5. Apply using trained staff
6. Apply using appropriate equipment
7. Avoid public, pets and water
8. Always store PPPs safely
9. Always dispose of PPPs and packaging safely
10. Audit results & maintain records



Guidance Notes



on

## Integrated Pest Management

For Use On

Irish Farms



# IPM End User Level



## Application of Integrated Pest Management (IPM) at user level.

Herd Number: \_\_\_\_\_ Year: \_\_\_\_\_

Tick only the appropriate options currently practiced on your farm.

1. The prevention and/or suppression of harmful organisms			
Crop rotation	<input type="checkbox"/>	Sterile seedbed technique	<input type="checkbox"/>
Clean machinery and equipment	<input type="checkbox"/>	Clean potato boxes/growing trays etc..	<input type="checkbox"/>
Nutrient management programme	<input type="checkbox"/>	Irrigation (applied to schedule)	<input type="checkbox"/>
Soil testing (pH, nutrients, OM)	<input type="checkbox"/>	Protect beneficial organisms	<input type="checkbox"/>
Certified seed	<input type="checkbox"/>	Full inversion tillage (plough)	<input type="checkbox"/>
Choose disease resistant varieties	<input type="checkbox"/>	Minimum cultivation	<input type="checkbox"/>
Management of crop residues	<input type="checkbox"/>	Soil structure & compaction	<input type="checkbox"/>
Use of optimal sowing date	<input type="checkbox"/>	Clean crop storage areas	<input type="checkbox"/>
Other (please specify)			
2. Monitoring of harmful organisms			
Use early warning/forecasting systems	<input type="checkbox"/>	Monitor crops for pests/diseases	<input type="checkbox"/>
Use weather forecast to aid decisions	<input type="checkbox"/>	Advisor monitors crops	<input type="checkbox"/>
Can identify main pests	<input type="checkbox"/>	Use traps/sticky pads/lures	<input type="checkbox"/>
Other (please specify)			
3. Application of plant protection measures			
Some crops treated preventatively	<input type="checkbox"/>	Advisor makes decision	<input type="checkbox"/>
Decisions jointly made with advisor	<input type="checkbox"/>	Some decisions based on pest thresholds	<input type="checkbox"/>
Other (please specify)			
4. Sustainable biological, physical or other non-chemical methods			
Use natural enemies	<input type="checkbox"/>	Use crop fleeces	<input type="checkbox"/>
Use micro-organism plant protection products	<input type="checkbox"/>	Use crop netting	<input type="checkbox"/>
Use propane burners for weed control	<input type="checkbox"/>	Use mechanical weeder (e.g., steerage hoe)	<input type="checkbox"/>
Use manual methods	<input type="checkbox"/>	Use deterrents (bangers, kites etc..)	<input type="checkbox"/>
Use of topper/mower for weed control	<input type="checkbox"/>		<input type="checkbox"/>
Other (please specify)			

Also to maintain PPP records

5. The pesticides applied shall be as specific as possible for the target pest.			
Applications usually for multiple pests	<input type="checkbox"/>	Resistance development is considered	<input type="checkbox"/>
Different modes of action considered	<input type="checkbox"/>	Broad spectrum products avoided	<input type="checkbox"/>
Different products considered	<input type="checkbox"/>	Familiar with different product labels	<input type="checkbox"/>
Economics are considered	<input type="checkbox"/>	Use advisor to help decide on product(s)	<input type="checkbox"/>
Consider following crops	<input type="checkbox"/>	Buffer zones are considered	<input type="checkbox"/>
Use weed licker for weed control	<input type="checkbox"/>	Use of seed dressings	<input type="checkbox"/>
Avoid insecticide use where bees are foraging	<input type="checkbox"/>	Use drift 75% reducing nozzles	<input type="checkbox"/>
Use air assisted sprayer	<input type="checkbox"/>	Use drift 90% reducing nozzles	<input type="checkbox"/>
Other (please specify)			
6. Use of pesticides at necessary levels			
Use reduced rates of application	<input type="checkbox"/>	Use adjuvants to reduce PPP use	<input type="checkbox"/>
Partially treat / spot spray fields	<input type="checkbox"/>	Applications timed to minimise use	<input type="checkbox"/>
Reduce frequency of application	<input type="checkbox"/>		<input type="checkbox"/>
Other (please specify)			
7. Anti-resistance strategies applied to maintain the effectiveness of the products			
Use products with multiple modes of action	<input type="checkbox"/>	Use robust rates of PPPs	<input type="checkbox"/>
Use tank mixes with multiple modes of action	<input type="checkbox"/>	Keep abreast of resistance development	<input type="checkbox"/>
Familiar with different product labels	<input type="checkbox"/>		<input type="checkbox"/>
Other (please specify)			
8. Success of the applied crop protection measure			
Success or failure of intervention is measured	<input type="checkbox"/>	Member of discussion group	<input type="checkbox"/>
Success or failure of intervention is recorded	<input type="checkbox"/>	Results discussed with advisor	<input type="checkbox"/>
Crop yields are recorded	<input type="checkbox"/>		<input type="checkbox"/>
Other (please specify)			

# IPM Considerations

- Is pest/weed control necessary?
- What are the options available?
- If PPP is to be used what is the classification of the product?
- Has a risk assessment been carried out?
- How can we reduce risks?
- Timing, staffing, equipment.



# Progress – Sustainable Use of Pesticides Directive



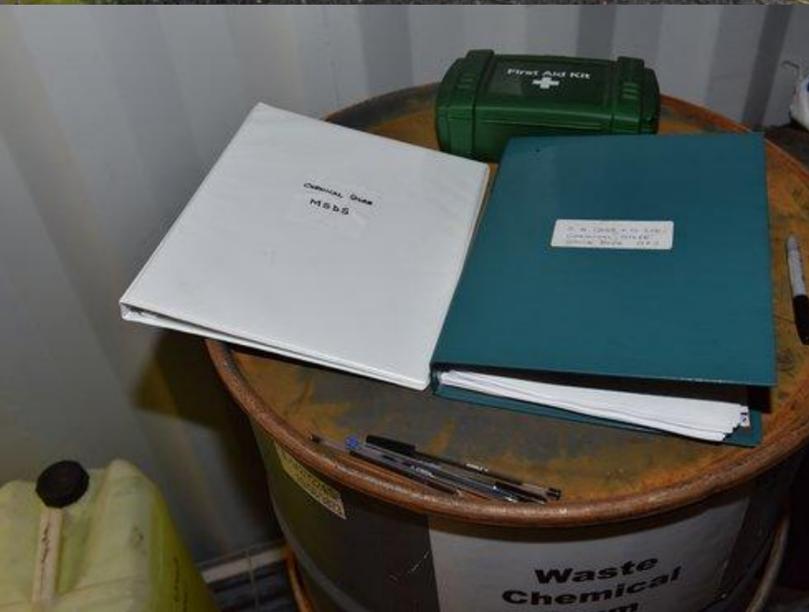
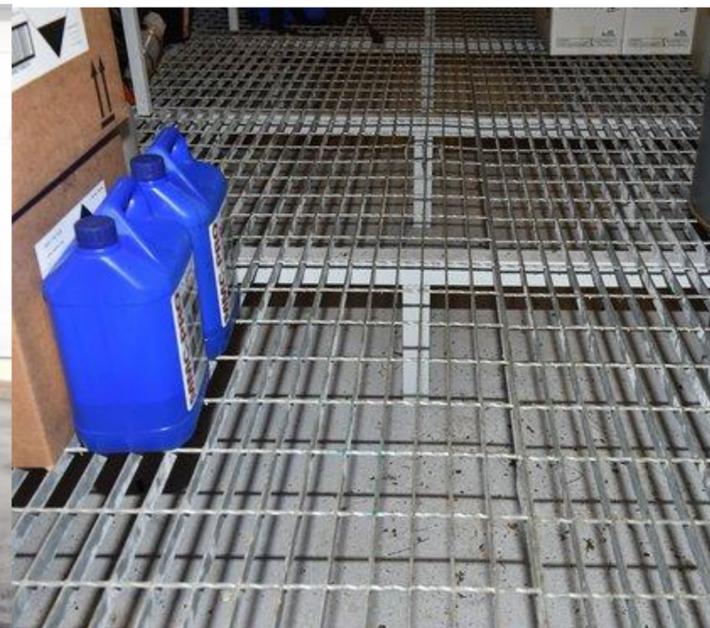
National Action Plan recently updated and published

Greater detail on implementation of Integrated Pest Management principles

Provision for testing all types of application equipment, other than knapsack sprayers



# Storing & using PPPs



# PAE inspections



- Boom sprayers <3m
- Slug pellet applicators
- Maize sowing equipment
- Drill mounted applicators
- Weed wipers / weed lickers
- Foggers



# Weed wipers – compliance



Operators must be trained and registered with the DAFM as a Professional User

If providing a contracting service, specialist training course in the use of weed-wipers, e.g. Lantra Level 2 Award in the safe application of pesticide using vehicle mounted or trailed wick type applicators or City & Guilds PA1 + PA2F – mounted or trailed wick type applicator, or QQI Level 5 Mechanical Pesticide Application (5N20435).

Only use professional use products containing glyphosate

Must keep records of all applications of professional use PPPs



# Inspection focus 2018 CC inspections (SMR 10)



- Abstraction points
- Sprayer filling
- Remnant management
- Cleaning sprayer
- Disposal of revoked products
- Disposal of containers and packaging



7 STEPS: GOOD PRACTICE  
GUIDE FOR EMPTY PESTICIDE  
CONTAINERS



Issue 1: April 2012



# Care when giving advice!



*“Rain water is generally satisfactory but many rivers and most boreholes have high pH water.” – Farming Indo (2019)*

It is **illegal** to:



Fill PPP application equipment directly from a water course

Mix, load or handle PPPs immediately adjacent to a water course



# Thinking of spraying!



1. Plan
2. Read and follow the label
3. Check use restrictions
4. Manage resistance build up
5. Know your equipment
6. Buffer zones
7. Droplet size/nozzle type
8. Monitor weather conditions
9. Talk to your neighbours
10. Triple rinse and dispose of containers appropriately
11. Keep records of use and evaluation of treatment

# Being **water** aware can help maintain the toolbox of available options



## It's in your hands

[www.pcs.agriculture.gov.ie](http://www.pcs.agriculture.gov.ie)

# Thanks for listening



[www.pcs.agriculture.gov.ie](http://www.pcs.agriculture.gov.ie)

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