H2OK? Keep it Clean

Advice on Pesticides for Water Protection in Northern Ireland

The Water Catchment Partnership

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Who Are We?

The Water Catchment Partnership is a working partnership established from representatives from Ulster Farmers Union, Northern Ireland Water, Northern Ireland Environment Agency, to Department of Agriculture, Environment and Rural Affairs, College of Agriculture, Food and Rural Enterprise and the Voluntary Initiative. Our aim is to deliver one message incorporating the ethos from all organisations to effectively tackle the problem of pesticides in the water environment; particularly in Drinking Water areas.

What's the Problem?

Pesticides used for weed control are often detected in rivers and lakes by NIEA and NI Water. These may pose a risk to local aquatic life and increase the cost of treating drinking water by NI Water. Stringent standards are set for water quality across Europe and sophisticated monitoring techniques can detect pesticide levels below one part in a billion – equivalent to one stem of hay in 111,000 bales!

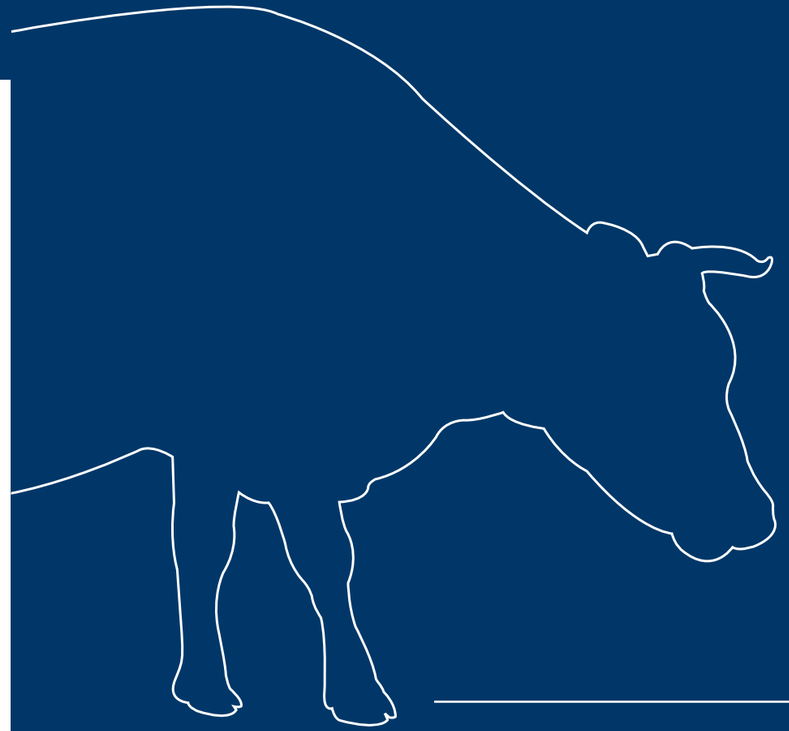
The pesticide residue on one foil seal can pollute water in 18 miles of stream to a level greater than the drinking water standard.

Aims of the Partnership...

Our aim is to proactively work together to promote and raise awareness of best practice when using pesticides in the garden or on the farm, through a voluntary approach to improve water quality.

What is a pesticide?

Pesticides include herbicides, fungicides and insecticides…..The main problem in Northern Ireland waterways is the herbicide MCPA.



Do livestock and grassland farms contribute to NI's pesticide problem?

Yes. Many of the products being detected in water are weed killers used on livestock farms to grow forage crops as well as improve and maintain grass. But there are simple low-cost solutions to avoid weed killers accidentally getting into water.

How do Pesticides reach our Water?

Ten areas highlighted as key risks:

In the Yard

Storage
a small leak can soon cause a serious pollution incident.

Sprayer maintenance
a leaking pipe, or loose connection means lost product and a threat to water quality.

Filling areas
the washings from a single foil cap can lead to excess pesticide levels some 30km downstream.

Washing
soon generates large volumes of dilute solution. This must be trapped for safe disposal.

Disposal
empty containers need to be cleaned and disposed of through a waste or recycling contractor.

In the Field

Cracked soils
allow chemical movement down the soil profile to drains and aquifers.

Run off and soil erosion
remove products in solution and attached to soil particles.

Tramlines
where possible should run across slopes to avoid run-off carrying pesticides to water.

Application timing
rainfall within 48 hours of application increases run-off and drain flow risks.

Drift
not only poses threats to water quality, but also to aquatic life.

With long-term planning, risks in cultivated fields can be reduced further:

- Review rotations to avoid cropping practices and cultivations on soils and slopes at risk of erosion.
- Grass-down valley bottoms leading to any watercourse.

MCPA...

The majority of pesticide problems at water treatment plants in N Ireland are caused by MCPA. This herbicide is largely used for the control of broadleaf weeds and rushes in grassland.

5 Steps to Best practice…

1. Seeking and taking good advice

- Good advice will help every step to best practice, from creating a chemical store, to spraying a crop and disposing of empty cans. There are many sources of advice – from your BASIS registered supplier or agronomist, to training courses and websites. Always check with your agronomist on the right product to use.

For detailed guidance on compliance with the law refer to the 'Code of Practice for Using Plant Protection Products'. This is available at www.daera-ni.gov.uk/articles/code-practice-using-plant-protection-products

2. Storing and handling with care

- An important first step with any pesticide is to read and follow the label instructions, taking note of any extra advice given by your BASIS registered agronomist. Remember to store the pesticides safely and securely. Be aware that any spills or splashes on concrete can quickly find their way to water. Always park sprayers under a roof or on a bunded impermeable filling area after use.

Across the UK about 40% of pesticides reaching water come from handling areas. Individual sites can account for 99% of problems in one catchment.

3. Managing soil to avoid water run-off into watercourses

- Do not overwork soil; Delay pesticide applications until the first rains have closed deep soil cracks;
- Create tramlines across, NOT down, slopes leading to a watercourse;
- Leave some surface vegetation and encourage rapid crop establishment to prevent raindrops from breaking down soil crumbs;
- Ensure field entrances do not create gullies for extra run-off.

4. Handling and disposing to prevent point source pollution

- Choose products which minimise the risk of spills and splashes and ease container cleaning;
- Review your filling area - identify and protect any farmyard drains that could pose a risk to water;
- Handle and mix on an impermeable surface e.g. concrete where washings are collected and drained to grass/soil (with Groundwater Authorisation) or via a lined Biobed. (See www.biobeds.info) For further information, please contact CAFRE at 028 9442 6770;
- Avoid using field entrances as a filling point if beside a watercourse or any area, e.g. road, track or other feature, which may channel run-off to a watercourse;
- Check the sprayer is in good working order. Use the National Sprayer Testing Scheme (NSTS) and operator checklist. Check for drips and leaks before leaving the mixing area;
- Never leave the sprayer unattended whilst filling;
- Fill using the induction bowl or closed transfer system where available;
- Pressure or triple wash containers with water and drain into the induction bowl. Rinse seals and lids over the induction bowl. Keep any cardboard clean;
- Store cleaned empty containers safely and upright after use. Follow disposal contractor's advice on segregating clean packaging material.

5. Field applications to protect water

- Establish a set-aside strip, or buffer-zone, beside any watercourse;
- Do not spray if ground is waterlogged or frozen; Avoid conditions where spray drift can occur and use nozzles which reduce drift;
- Do not spray over buffer zones & watercourses;
- Spray headlands last;
- Ensure cleaning activities take place away from watercourses;
- Spray tank washings on to the crop;
- Wash the outside of the sprayer before leaving the field;
- Keep tyres as mud-free as possible, cleaning them before leaving the field.

What is a LERAP?

LERAP is short for Local Environment Risk Assessment for Pesticides. Conducting a LERAP is a legal requirement if you want to reduce an aquatic buffer zone requirement specified on the label for some pesticides (including most insecticides). Refer to the guidance in the HSE's website www.hse.gov.uk/pesticides/using-pesticides/spray-drift/local-environment-risk-assessment-for-pesticides-le which gives information on LERAP Scheme descriptions, a link to a list of pesticides which have aquatic buffer zone restrictions etc.

Using a Contractor

There is no legal requirement for contractors to be NRoSO registered, however by law, everyone who uses pesticides professionally must have received adequate training in using pesticides safely and hold a recognised and relevant Specified Certificate of Competence (NPTC Level 2 Pesticide Application Certificate or LANTRA Award Level 2). However it is a requirement of some Quality Assurance Schemes such as Red Tractor for contractors to hold NRoSO Registration.

All pesticide application equipment in professional use (not just in use by a contractor requires, by law, a valid National Sprayer Testing Scheme (NSTS) certificate. This includes trailed, mounted and self-propelled sprayers as well as foggers, misters, granular and slug pellet applicators.

A spillage of only one gram of active ingredient will need to be diluted by ten million litres of water to meet the maximum limit for a pesticide in drinking water.

Using your knapsack sprayer…

The knapsack sprayer is very useful for spot treating weeds and tidying up around the farmyard with total or selective weed-killer, but it is easy to over-fill and difficult to clean out without a lot of splashes or spills. Ideally you require a designated filling or handling area, cleaning the sprayer on grass and ensuring washings do not enter drains or ditches.

Knapsack Rate Table:

Using standard nozzles giving 200 litres per hectare, assume a full 20 litre knapsack covers 1000 square metres and walking at a rate of one metre per second.

Label Rate Litres per hectare	Dilution Ratio	Amount of concentrate to add to one litre of water in millilitres (5ml is one teaspoon)	Area covered by one litre of mixed-up spray solution
1	1:200	5	50m^2
2	1:100	10	50m^2
3	1:67	15	50m^2
4	1:50	20	50m^2
5	1:40	25	50m^2
6	1:33	30	50m^2
7	1:28	35	50m^2
8	1:25	40	50m^2
9	1:22	45	50m^2
10	1:20	50	50m^2

H20K? Top Tips Check-List

1. Do you understand how pesticides get into water?
2. Are you aware of your local water protection priorities?
3. Do you have a farm map showing all watercourses and pesticide handling areas?
4. Do you have plans showing the drainage around your pesticide wash down and handling areas?
5. Are all pesticides (sprays and pellets) applied by trained, competent staff?
6. Are all watercourses protected with an adequate grass buffer strip or no spray zone?
7. Are soils managed to avoid erosion or run-off?
8. Do you avoid applying pesticides to dry, cracked or saturated soils and delay application if heavy rain is expected within 48 hours?
9. Is application equipment cleaned in the field away from watercourses and drains or are washings contained and treated in a lined biobed or biofilter?
10. Do you refer to Water Protection Advice Sheets (WPAS)?

Spraying Law Changes - What Do You Need to Do?

Sprayer Testing

- Pesticide application equipment, other than knapsacks and hand-helds, must have passed a test conducted by the National Sprayer Testing Scheme (NSTS). The frequency of retesting depends on the type of machinery.
- From 26th November 2020, boom sprayers over 3 metres, air blast sprayers, and train and aircraft sprayers must have been tested within the last 3 years.
- Boom sprayers 3 metres and under, micro-granular and slug pellet applicators, weed wipers, seed treatment and other specialist application equipment are due a re-test every 6 years.
- Boom sprayers, micro-granular nematocide applicators and fogging machines must be tested annually under crop assurance scheme requirements.
- Machinery must be re-calibrated by the user on a regular basis.

A Certificate to Use

All operators who apply Plant Protection Products are legally required by the Plant Protection Products (Sustainable Use) Regulations (2012) to undertake training leading to the award of a specified certificate of competence recognised by the Department (NPTC Level 2 Pesticide Application Certificate or LANTRA Award Level 2).

Useful websites offering more information:

The Voluntary Initiative: www.voluntaryinitiative.org.uk
Ulster Farmers Union: www.ufuni.org
Northern Ireland Water: www.niwater.com
Department of Agriculture, Environment and Rural Affairs: www.daera-ni.gov.uk
College of Agriculture, Food and Rural Enterprise: www.cafre.ac.uk
Northern Ireland Environment Agency: www.daera-ni.gov.uk/northern-ireland-environment-agency
Health and Safety Executive NI: www.hseni.gov.uk
National Association of Agricultural Contractors: www.naac.co.uk
CropLife UK: www.croplife.uk
Health and Safety Executive – Chemicals Regulation Division: www.hse.gov.uk/crd or www.hse.gov.uk/pesticides/index
National Sprayer Testing Scheme: www.nsts.org.uk
National Register of Sprayer Operators: www.nroso.org.uk

This leaflet was produced by The Water Catchment Partnership as part of The Voluntary Initiative's work in Northern Ireland. The Voluntary Initiative is a programme of measures promoting responsible pesticide use.

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