Agriculture and Water

By Paula Browne, ASSAP Adviser, Teagasc Galway/Clare

Throughout the week of **Monday, 22nd March to Friday, 26th March –** Teagasc, in collaboration with the dairy processing co-ops and the Local Authority Waters Programme (LAWPRO), are running a Water Quality Week. The purpose of the week is to provide water quality focused information and advice to farmers to help minimise losses of nutrients, sediment and pesticides to water from their farming practices. Gearing up for another year in the farming calendar, a number of key considerations should be central to minimising any pollution potential to our watercourses around three key areas.

1. Fertiliser and slurry application
2. Critical Source Areas
3. Herbicide use

Fertiliser and Slurry Application:

Nutrient losses to water will occur when spreading chemical or organic fertiliser if applied inappropriately. It is very important to maximise the nutrient use efficiency (NUE) by applying the right fertilisers in the right place on the farm, at the right rate and at the correct times of the year.

When planning spreading any nutrient type to soil, there is a number of criteria that we should consider first:

- Nitrogen and Phosphorus in their various forms along with Sediment (Silt & Clay Particles) are pollutants in water.
- Do you have a Nutrient Management Plan (NMP) in place, are soil samples up to date regarding lime advice and soil indexes?
- Soil Temperature – grass starts growing above $6^{O}C$.
- Use the forecast, don't spread fertiliser or slurry if heavy rain is forecast within 48 hours.
- Soil Conditions – Don't apply fertiliser or slurry to wet (underfoot) or waterlogged soils, this results in nutrient run-off, Phosphorus binds with sediment and washes easily into watercourses, particularly after heavy rain and on sloped ground.
- Are you using the right product and in the right place (according to NMP)? - At the right time (is grass growing and soil moisture deficit suitable)?
- Is your fertiliser spreader calibrated correctly (right rate)?
- Use protected urea and/ or Low Emission Slurry Spreading Equipment. The benefits include reducing harmful gases to the atmosphere and making the best use of available nutrients in the fertiliser and slurry.
- Where a surface watercourse is present are you observing the minimum 2m buffer when spreading fertiliser and 5m buffer with slurry (10 m where slope exceeds 10 %)?

Critical Source Areas (CSA's):

- These are higher risk areas on farms that can potentially deliver increased levels of nutrients to water.
- On poorly drained heavier soils, where overland flow is the pathway for nutrients during heavy rainfall, CSA examples include: a break in a hedgerow alongside a water body or a sloped field converging towards a boundary watercourse.
- Fields with free draining soils are a potential CSA as these are more susceptible to nitrate leaching.
- It is important to identify such areas on the farm and target the correct actions: to reduce the source by applying nutrients appropriately or break the pathway for example planting a hedgerow or fencing off a riparian margin.

Herbicide Use:

Detection of four widely used, highly water soluble herbicidal active ingredients, namely, MCPA and 2, 4-D (e.g. Lupo), Glyphosate (e.g. Roundup) and Triclopyr (e.g. Grazon Pro) accounted for 78% of the total drinking water exceedances nationally in 2020. MCPA has been long identified as a potential issue with drinking water in a lot of the county. Please follow best practice guidelines below with specific regard to maintaining water quality.

1. Storage and Preparation for Spraying:

- The chemical cabinet or store should be bunded with the potential for spillages to be soaked up.
- All users must be a trained professionally. Horizontal boom sprayers, ATV sprayers less than 3m and weed wipers must be maintained, calibrated and tested every 3 years of initial inspection.
- Non chemical control strategies such as topping, mulching, drainage, preventing poaching, liming and improving soil fertility should be considered before using any herbicidal product.

2. Handling Herbicides:

- Carefully read label instructions regarding correct use, rate and timing of application.
- When dispensing/ diluting concentrated product, make sure you have a containment system in place to collect any spillage.
- Sprayers should never be filled directly from any watercourse.

3. Spraying Herbicides:

- Adhere to the Buffer Zone on the product label in the vicinity of any watercourse (incl. dry drains) (generally 5m for grassland herbicides).
- Be aware of the Safeguard Zones for the protection of drinking water abstraction points.
- Do not apply close to areas such as karst bedrock (or outcrop), swallow holes or field drains filled to the soil surface with stone.
- Only consider spraying on a calm settled day, where soil and vegetation is dry, with no rainfall forecasted for 48 hours and where weeds are actively growing.
- Triple rinse empty containers and add rinsate to the sprayer.
- Spray out tank washings and wash down external parts of the sprayer in the field. Do not discard sprayer washings on a yard soakaway or gravel area as it could potentially enter a watercourse.

Further information on water quality week is available on www.teagasc.ie/waterqualityweek, from your local Co-op Sustainability Advisor and www.watersandcommunities.ie

Date	Theme
Monday 22nd March	Water Quality and Catchment Management
Tuesday 23rd March	Utilising Nitrogen Inputs Efficiently
Wednesday 24th March	'Breaking the pathway' of Phosphorus and Sediment loss
Thursday 25th March	Protecting Water from Pesticide losses
Friday 26th March	Managing your Farmyard and Signpost Webinar