



Positive pH trends in the catchments

Oggy Zurovec, Soil Scientist

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What is pH? pH is an abbreviation for “power of hydrogen” where “p” is from the German word for power (potenz) and H is the element symbol for hydrogen. It is a measure in chemistry which shows how acidic/basic liquid solutions are (soil water in the case of soils).

The range goes from 0 to 14; 7 is neutral, values < 7 indicate an acid and > 7 indicate a base. Pure water is neutral, neither an acid nor a base. Battery acid has a pH close to 0, while some chemical drain cleaners have a pH close to 14. Worldwide, most soils have pH values between 3.5 and 10.

Last winter we undertook a soil sampling campaign in the Timoleague, Ballycanew and Castledockrell catchments. The results are now available and we are putting together a booklet on the soil fertility trends found across catchments, farms and fields.



*Lime is continually lost from the soil and
needs to be regularly replaced*

As an example, the below table shows the average pH of the soils at the catchment scale and a comparison with the first ACP soil sampling done in 2008. Optimum pH for grassland is 6.3 and for tillage soils it is 6.5 to 7. Also shown is the percent of samples with a pH less than 6, which is below what is required for efficient use of N, P and K fertiliser.

Catchment	2008		2020	
	Average soil pH	% samples below pH 6	Average soil pH	% samples below pH 6
Timoleague	5.7	74%	6.1	40%
Ballycanew	5.9	55%	6.1	35%
Castledockrell	6.4	23%	6.5	7%

Soil pH has improved considerably in the three catchments over the last 12 years, but there are still many soils that require lime. There are opportunities to spread lime during the growing season, such as on low grass covers after silage cutting or when paddocks have been grazed off. Care is needed, however, as N availability from slurry and urea fertiliser spread on top of recently applied lime is reduced. It is best to spread ground limestone after these fertilisers have been “washed” into the soil.

Also, lime should not be spread where there is a risk that it could be picked up with grass harvested for silage, as it can negatively affect preservation and quality. Derogation farms must have a liming programme and spread a minimum of 25% in year one. Details are on pages 2 and 3 of your derogation plan.

Question: A logarithm scale is used to simplify the presentation of pH values. Name one other common use of such

a scale - answer is at the end of this newsletter.

Harvest 2021 has got off to a good start across our farms with tillage enterprises. A reminder to sow cover crops as early as possible post harvest to ensure good, early growth is achieved. Relatively small changes in sowing date in August can impact hugely on production and soil nutrient capture potential - please contact your ACP advisor for more details.

Gaseous emissions added to our remit

Edward Burgess, Catchment Specialist

It is no surprise that the programme has been asked by our funders, the Department of Agriculture, Food and the Marine, to add gaseous emissions and carbon sequestration to our existing water quality research.



New EC tower being checked in Wexford

Part of this work involves Eddy Covariance (EC) towers to provide local, high resolution (ten times a second) measurement of carbon dioxide (CO₂), water vapour (H₂O) and methane (CH₄) in air. The main objectives are to examine long-term (> 4 years) GHG changes for different land uses (arable and grassland) and also the impact of weather, soil drainage and farm management practices.

Nitrates Directive changes

Edward Burgess, Catchment Specialist

The nitrates directive is reviewed every four years, changes are then agreed with the EU and the regulations are subsequently updated. This process is currently under way and there will be new nitrates rules to comply with from next year (2022).

The ACP is very involved in this process and in previous reviews most of the changes to the nitrates regulations have been favourable, including things like ploughing date, P content in slurry applied to soils of

low fertility, extra N on malting barley and P allowance on high pH soils.

However, the increase in dairy cows nationally and specifically in the south and east of the country, has come in for a lot of comment. It will be no surprise to see additional focus on highly stocked farms, including those that remain outside derogation by moving organic manure to other farms.

Farmer focus: Jimmy Murray, Goat farmer

Suzanne Neary, Advisor

Jimmy is currently milking 250 goats at his farm in the Dunleer catchment. He converted from dairy cows to milking goats 14 years ago when land and quota constraints left him looking for alternative enterprises. Jimmy milks all year round supplying Glenisk for their milk and yogurt products. His herd, made up of mainly Saanen breeding and some Toggenburg, is producing an average of three litres of milk per day.

It is quite labour intensive as goats are indoor all year round in straw bedded sheds, fed on a mix of silage, maize and

concentrates. Jimmy says for potential new entrants to goat farming the most important factor is having an outlet for the milk.



New team members

Bridget Lynch, Agronomist

Prior to joining the team in January of this year, I was Associate Professor of Grass and Forage Science in University College Dublin where the majority of my research was based at UCD Lyons Farm.

I now lead the agronomic aspect of the ACP including the soil science, gaseous emissions and socio-economic teams within the programme.

My other research interests include: evaluation of multispecies swards for livestock systems; grazing management for grass-based dairy production; knowledge transfer of grassland science technologies and biorefinery of grass.

Originally from Co. Waterford, I now live in south Wexford, on a mixed dairy, beef and sheep farm with my husband and family.

Phase four of the programme has brought with it new roles, new faces and we have a full complement of 23 staff working across the programme.



Some of the staff are very familiar to you, being with the ACP from the start, others are new to the programme for this phase and we hope you get to meet all of the team at some stage over the remainder of this phase.

Our website is being updated with the new staff profiles and you can find out more or put a name to a face there in the 'People' section.

Gallery



Eilish, Oisín and Edward during recent filming in Timoleague



Summer time in Timoleague



*Saint David's church Philipstown,
Dunleer - built c. 1836*

Keep in Touch

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This newsletter is produced for the over 300 farmers in the Agricultural Catchments Programme (ACP).

The ACP is a DAFM-funded project and this newsletter is edited by Tom O'Connell, ACP Communications Officer.

Please feel free to contact Tom on 087 0609620 or tom.oconnell@teagasc.ie for further information or with any suggestions for future newsletters.

Answer: The Richter scale for measuring the strength of earthquakes.