

Events	1
<i>Webinar on iron phosphate chemistry applied to phosphorus stewardship</i>	1
<i>Environmental efficiency of wastewater treatment plant configurations</i>	1
<i>Postponement ESPC4 and PERM → 31st May – 2nd June 2021</i>	1
<i>Rescheduling ... RAMIRAN 2020, Systemic, ESNI</i>	1
Consultations for your input	2
<i>Urgent: Consultation open on R&D to support the Green Deal</i>	2
<i>Urgent: Input requested for by-products in EU Fertilising Products Regulation</i>	2
<i>ESPP, SuMaNu, Water Europe input on Circular Economy Action Plan</i>	2
<i>Input your ideas for a European nutrient strategy</i>	2
EU Farm to Fork Strategy	2
<i>EU Integrated Nutrient Management Action Plan</i>	2
Industry news	3
<i>Prayon acquires Ecophos process technology</i>	3
Research and demonstration	3
<i>FERTIMANURE now online</i>	3
<i>WATER MINING P-recovery from iron</i>	3
<i>REPARES project launched: antibiotic resistance</i>	3
<i>NITROMAN</i>	4
<i>Polyphosphate biology and methane</i>	4
Stay informed	4
ESPP members	4

Events

Webinar on iron phosphate chemistry applied to phosphorus stewardship

This workshop remains fixed 13-14 July, 2020, but the schedule and event design is completely revised for webinar. Presentations/papers will be available to participants before the event and the three web sessions will concentrate on discussion and questions, completed by an online forum. Themes are: Iron phosphorus interactions in natural systems and in wastewater, iron and phosphorus crop availability, iron for P-removal from aquatic systems and P-recovery from iron-containing waste streams. **Register now: limited to 100 participants.**

Programme ad register: <https://www.eventbrite.co.uk/e/iron-phosphate-chemistry-applied-to-phosphorus-stewardship-and-p-recovery-tickets-96759011809>:

Environmental efficiency of wastewater treatment plant configurations

Kemira webinar, 16th June 14h00 CET. Presentation and discussion of a new study by IVL Swedish Environmental Research Institute comparing three different wastewater treatment plant configurations: pre-precipitation, simultaneous precipitation, and biological phosphorus removal. Differences in environmental efficiency in terms of carbon footprint, energy balance, impacts of stricter effluent limits.

Kemira and members of INCOPA (European Inorganic Coagulants Producers Association) have contributed to this study. Link for registration or to receive the webinar recording afterwards: [REGISTER](#)

Postponement ESPC4 and PERM → 31st May – 2nd June 2021

Given the development of the international corona virus situation, and after re-discussion with the venue hotel and the Belvedere Palace, Vienna, we have decided to postpone ESPC4 and PERM (4th European Sustainable Phosphorus Conference and European Phosphorus Research Meeting) from June 2020 to **Vienna 31st May – 2nd June 2021**
<https://www.phosphorusplatform.eu/espc4>

Rescheduling ... RAMIRAN 2020, Systemic, ESNI

The manure and organic resources recycling conference, RAMIRAN, is rescheduled (provisionally) to 20-23 September 2021, Cambridge, UK.

The SYSTEMIC workshop on nutrient recovery from anaerobic digestion and ESNI (European Sustainable Nutrient Initiative) are rescheduled to 26 – 27 October 2020, Brussels

Ramiran: www.ramiran2020.org

ESNI and SYSTEMIC workshop on [Eventbrite](#)

Consultations for your input

Urgent: Consultation open on R&D to support the Green Deal

The European Commission has a **public consultation open to 3rd June** on content of research funding calls to support the EU Green Deal. Of the eleven call areas, two particularly concern phosphorus and nutrient stewardship: Call area 3 = “Industry for a clean and circular economy (Demonstration of systemic solutions for the territorial deployment of the circular economy)” and 6 = “Farm to Fork”. ESPP welcomes that the circular economy proposed call includes “organic and waste-based fertilisers” in the sectors to be covered. ESPP welcomes that the Farm-to-Fork proposed call refers to fertilisers and nutrients (improving nutrient efficiency and reducing nutrient losses). **Individuals and stakeholders can submit feedback** supporting these calls by completing the very short questionnaires (2 questions plus optional comments) for these two call areas at the link below.

EU Green Deal Call consultation, open to 3rd June https://ec.europa.eu/info/research-and-innovation/strategy/european-green-deal/call_en

Urgent: Input requested for by-products in EU Fertilising Products Regulation

The European Commission (JRC) has circulated for comment a first report ([available here](#)) proposing a list of by-products for acceptance in the EU Fertilising Products Regulation (CMC11) and outlining possible methodology for safety and agronomic criteria for by-products use as fertilising products. The report includes tables of by-products proposed for probable acceptance or exclusion (Tables 2 – 4, pages 29 – 37), specifying the by-product material, the process / industry from which it could be accepted and possible contaminant risks. The report also poses seven questions to stakeholders and experts (page 42) concerning the proposed “directional framework”, information to consider and contaminants in by-products. In particular, input is requested on by-products not yet included in the tables and information is requested on the industries, process and chemicals used to produce the by-products already listed. Input must be made via members of the EU Fertilisers Expert Group (ESPP is a member) before 4th June, so please send any **comments and input to ESPP before 4th June deadline**.

“Technical proposals for by-products as component materials for EU Fertilising Products. Background document.” European Commission JRC, 24th April 2020 (42 pages) [available here](#) Comments to info@phosphorusplatform.eu by latest 4th June.

ESPP, SuMaNu, Water Europe input on Circular Economy Action Plan

ESPP input directly to the Committee of Regions consultation on the new EU Circular Economy Action Plan (CEAP, see ESPP eNews n°43), emphasising the role of local and regional authorities in delivering the circular economy, need for changes in the economic and fiscal framework to make nutrient recycling “competitive”, need to address regulatory obstacles to recycling of wastes, importance of setting recycling targets in EU water policy and potential for job creation of the nutrient circular economy. ESPP also contributed to a detailed joint position with [Water Europe](#) (the water RTD network) on the proposed Integrated Nutrient Management Action Plan (INMAP), included in this new EU Circular Economy strategy proposal (INMAP is also included in the EU’s now-published Farm-to-Fork Strategy, see below). SuMaNu, the EU territorial cooperation project on manure and nutrients in the Baltic Sea Region, also [submitted](#) to the consultation, making some similar points to ESPP, welcoming references to planetary boundaries and SDGs (Sustainable Development Goals) and underlining that “There is no waste, there are just resources”.

European Committee of Regions Stakeholder Consultation “New Circular Economy Action Plan” <https://cor.europa.eu/en/events/Pages/New-Circular-Economy-Action-Plan.aspx>

SuMaNu input: <https://balticsumanu.eu/input-to-eu-circular-economy-action-plan/>

Input your ideas for a European nutrient strategy

As indicated below, the European Commission has announced that it will prepare an **Integrated Nutrient Management Action Plan** (INMAP). ESPP is working on concerted proposals for the objectives, content and mechanisms of such an Action Plan. A first draft, developed with [Water Europe](#) is online here, and **your input and comments are invited**. Please send us your ideas and comments, in order to enrich a structured and concerted submission to the European Commission.

Document online – send us your input by 30th June 2020

<http://www.phosphorusplatform.eu/regulatory>

EU Farm to Fork Strategy

EU Integrated Nutrient Management Action Plan

The European Commission has [published](#) its “Farm to Fork Strategy for a fair, healthy and environmentally-friendly food system”. Two of the six [headline objectives](#) of the Strategy concern nutrient stewardship: **reduce nutrient losses by at least 50% by 2030**, while ensuring no deterioration on soil fertility and **reduce fertilizer use by at least 20% by 2030**. The first of these objectives was proposed to the European Commission by ESPP [in 2018](#). The Commission [webpage](#) underlines that “The excess of nutrients in the environment is a major source of air, soil and water pollution, negatively impacting biodiversity and

climate". The Farm-to-Fork Strategy confirms the development of an EU "Integrated Nutrient Management Action Plan" (INMAP) as already included in the revised Circular Economy Action Plan proposals (see ESPP eNews [n°43](#)). This will "address nutrient pollution at source and increase the sustainability of the livestock sector ... extend the application of precise fertilisation techniques and sustainable agricultural practices ... and of recycling of organic waste into renewable fertilisers", including via the FaST tool (Farm Sustainability Tool for Nutrients) in the new CAP (see ESPP eNews [n°25](#) and [n°31](#)). The Strategy notes the need for "managing nitrogen and phosphorus better throughout their lifecycle" and makes the link between reducing food waste and recovery of nutrients. Other key aspects of the Farm-to-Fork Strategy include facilitating a shift towards healthy and sustainable diets: "moving to a more plant-based diet with less red and processed meat and with more fruits and vegetables". Proposed actions include: "preventing advertising meat at low prices", nutrient profiles for foods (2022), mandatory nutrition labelling for food products (2022), setting of maximum levels for certain nutrients in processed foods (2021), revision of the animal feed regulation (2021), mandatory criteria for sustainable food procurement (2021), sustainable food labelling framework (2024) and tax incentives.

EU Farm-to-Fork [Strategy](#), COM(2020)381, 20th May 2020

EU new Circular Economy Action [Plan](#), COM(2020)98, 11th March 2020

Industry news

Prayon acquires Ecophos process technology

Prayon (ESPP member) has announced its acquisition of the intellectual property, including patents portfolio and process know-how of Ecophos s.a. which filed for bankruptcy earlier this year. The acquisition includes the semi-industrial demonstration plant of Technophos JSCo based in Varna, Bulgaria (see ESPP Scope Newsletter [n°120](#)). Marc Collin, CTO of Prayon stated: "Prayon is very happy to announce this acquisition since it fits perfectly with our strategy. The process portfolio proposed by Ecophos is complementary to that offered by Prayon through its licensing division. We will continue to promote them in parallel as they have their own particular specificities. It is also an important step towards our goal to become an important actor of the circular economy".

Prayon [press release](#) 6th May 2020.

Research and demonstration

FERTIMANURE now online

The website of ESPP member project FERTIMANURE is now online (Innovative nutrient recovery from secondary sources: production of high-added value FERTilisers from animal MANURE, see ESPP eNews [n°41](#)). The website outlines the project's objective of processing manure to novel fertilisers which match crop requirements, are homogeneous, predictable and reliable and safe, ensure a high Nutrient Use Efficiency (NUE), and are cost-effective and easy to apply. The project will develop on-farm production of bio-based fertilisers, on-farm customisation of these to specific crop needs by combination with mineral nutrients and demonstrate their application and use.

FERTIMANURE (Horizon 2020) <https://www.fertimanure.eu/en/the-project-s-response>

WATER MINING P-recovery from iron

The Horizon 2020 "Water Mining" project, starting in September 2020, includes WETSUS development of iron oxide (FeO) adsorbents to achieve very low levels of phosphorus discharge in sewage works and of vivianite crystallisation. This ferrous oxide adsorbent technology won stages 1 and 2 of the Everglades Foundation George Barley Prize* (see ESPP eNews [n°29](#)) and the new EU project will enable development of phosphorus recovery and regeneration of the ferrous oxide adsorbent. Vivianite crystallisation enables the use of iron salts for chemical P-removal to iron phosphates in a form which can be more readily recovered, see Scope Newsletter [n°133](#) and ESPP eNews [n°26](#). These technologies will be demonstrated on waste water treatment plants in Cyprus and in Barcelona.

* To our understanding, the Everglades Foundation George Barley Prize never delivered the 10 million dollar "prize" promised, because the conditions fixed by the organisers for building the demonstration plant for the final stage of the prize were refused because unrealistic by all candidates concerned. The prize [website](#) is no longer online

[Water Mining](#) is led by Delft Technical University.

ESPP webinar on iron phosphate chemistry, 13-14 July 2020, register [here](#).

REPARES project launched: antibiotic resistance

The Horizon 2020 'Twinning' project REPARES (Research platform on antibiotic resistance spread through wastewater treatment plants) intends to investigate to what extent sewage treatment systems may spread antibiotic resistant bacteria (ARB) or antibiotic resistance genes (ABG) in the environment, and to engage with researchers and stakeholders to disseminate

information. The project is coordinated by UCT Prague, with TU Delft, Aalborg University, Catholic University of Porto and WETSUS.

REPARES: <http://repares.vscht.cz/>

NITROMAN

This project will demonstrate two technologies for processing the liquid fraction (after solid-liquid separation) of digested or raw pig or cattle manure: stripper-scrubbing (using steam or air), to remove nitrogen and recover ammonia salt solution; reverse osmosis membrane to generate a “mineral concentrate”. The project will include pilot-scale installations of the two technologies on farms, and field testing of the resulting products, both for demonstration to farmers, and to assess crop nitrogen uptake and nitrogen leaching losses, as well as LCA (life cycle analysis) assessments.

NITROMAN <https://www.vcm-mestverwerking.be/en/faq/21214/nitroman> and <https://www.facebook.com/NITROMANproject>

Polyphosphate biology and methane

Polyphosphate accumulation in bacteria has been widely studied, and is the mechanism which enable “bio-P” biological phosphorus removal in sewage works (in aerobic conditions). A study shows that Archaea micro-organisms can accumulate polyphosphates in anaerobic conditions. Archaea are one of the three domains of micro-organisms: Archaea, Bacteria and Eukaryota. They are often found in extreme conditions, such as high temperatures, salty or alkaline waters. This study concerns Methanoscara, a genus of Archaea which produce methane and may have been responsible for one of earth’s great extinctions, the Permian-Triassic event, by converting marine carbon sediments to methane. This study showed that Methanoscari could accumulate cellular polyphosphates, in anaerobic conditions, when first deprived of phosphate for three days, then given high phosphate. Methane production by the micro-organisms continued in all conditions. After six days, the Methanoscari accumulated 0.22 mg P-polyphosphate per g of protein. The authors suggest that this may have implications for links between global phosphorus cycling and atmospheric methane emissions, and may also provide a possible route to combine P-removal with biogas production in sewage treatment.

“The potential for polyphosphate metabolism in Archaea and anaerobic polyphosphate formation in Methanoscara mazei”, F. Paula et al., *Nature Scientific Reports* (2019) 9:17101

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ESPP members

