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## Events and conferences

### Leading organic fertiliser companies will meet at first summit

The first **Summit of the Organic Fertiliser Industry** in Europe (**SOFIE**, 5-6 June 2019, Brussels) will bring together organic and organo-mineral fertiliser producers, from across Europe, in the context of the **new EU Fertilising Products Regulation**. This new regulation will open the EU market for both organic fertiliser products, and for nutrient recycling and processing technologies for organic secondary raw materials. The summit is organised by ESPP, in partnership with IFS (International Fertiliser Society), and will back-to-back to the **IFS technical conference** 4-5 June. Registrants and speakers to date include organic fertiliser manufacturers and distributors from a dozen different EU countries and from the USA, leading agronomists, nutrient recycling R&D projects and the European Commission: 4R Group, ADAS, AFAIA, Agaris, AgroAmerica, AgroPower Düngmittel, Angibaud Derome, Benefert, Biolan Oy, Biomasa Peninsular, CSIC Spain, Culterra, EBA, ECN, ECOFI, Eurofema, Ferm-O-Feed, Fertikal, Fertilizers Europe, GME, Humintrade, Inagro, Memon, Mestoffen NL, Nature Energy, Orgoneem, OvinAlp, Profikomp, Pur Ver, Reterra, Rothamsted, Roullier, SILC Fertilizzanti, SoilFood Oy, Styriafert, Suez, Sustane Natural Fertiliser Inc, UNIFA, VDVAgrri, Wageningen, Xylemport, Yara, DG AGRI, DG RTD, DG GROW, ...

Programme [www.phosphorusplatform.eu/SOFIE2019](http://www.phosphorusplatform.eu/SOFIE2019) - Registration SOFIE [www.eventbrite.co.uk/e/sofie-organic-fertilizers-summit-tickets-55703185728](http://www.eventbrite.co.uk/e/sofie-organic-fertilizers-summit-tickets-55703185728) - IFS Technical Conference June [www.fertiliser-society.org/event/2019-ifs-technical-conference.aspx](http://www.fertiliser-society.org/event/2019-ifs-technical-conference.aspx)



## Waste water phosphorus removal tomorrow: ambitions and reality



9<sup>th</sup> October, Liège, near Brussels. In the context of the current revision of EU water policy (Water Framework Directive, Waste Water Treatment Directive), and with participation of the European Commission (DG ENVI, DG RTI), this [workshop](#) will enable dialogue between the water industry, experts and policy makers (EU, national) on perspectives for phosphorus removal: low discharge consents, flexible permitting / emissions trading, P-removal from small sewage works. **Registration now open:** [www.phosphorusplatform.eu/PremovalWorkshop](http://www.phosphorusplatform.eu/PremovalWorkshop)

In partnership with / supported by: IWA (the International Water Association), Eureau, CIWEM (Chartered Institution of Water and Environmental Management), Université de Liège and ECSM'19 (European Conference on Sludge Management), Liège 6 - 8 October 2019 Workshop website [www.phosphorusplatform.eu/PremovalWorkshop](http://www.phosphorusplatform.eu/PremovalWorkshop) For information on the phosphorus removal workshop, contact [info@phosphorusplatform.eu](mailto:info@phosphorusplatform.eu)

## 9th International Phosphorus Workshop (IPW9)

"Putting phosphorus first? How to address current and future challenges". ETH, Zurich, Switzerland, 8 - 12 July 2019. The 9<sup>th</sup> International Phosphorus Workshop (IPW9) will address five research themes: 1. phosphorus scarcity; 2. optimizing regional and national phosphorus cycles; 3. sourcing phosphorus fertilizers; 4. efficient phosphorus use in agroecosystems; 5. environmental phosphorus problems.

Website [www.ipw9.ethz.ch](http://www.ipw9.ethz.ch)



## Save the date: ESPC4

The 4th European Sustainable Phosphorus Conference is fixed for Vienna, 15 - 17 June 2020

See more upcoming events at [www.phosphorusplatform.eu/upcoming-events](http://www.phosphorusplatform.eu/upcoming-events)

## CRU "Phosphates 2019" Conference, March 2019



The 12<sup>th</sup> CRU "Phosphates" conference, the leading annual phosphate industry conference worldwide, took place in Orlando, Florida, 25-27 March 2019. The event started with an excursion to Mosaic's Streamsong mine reclamation project, a world class golf resort which was designed and built on an exploited phosphate mining area. This development was possible because the mine operated before US 1996 legislation requiring mine reclamation to "natural" state. At the "Phosphates 2019" Conference

itself, CRU presented its market forecasts: phosphate rock extraction is expected to grow by around 1% per year until 2023, with a slowdown in China (after 15 years of rapid growth) and stronger growth in Middle East and Africa. Due to mine closures because of stricter environmental regulations, China could even become a rock importer after the year 2022. Morocco and Saudi Arabia are expanding their production capacity which will exceed the growth of demand during coming years. Consequently, no price increase can be expected. Sessions on agronomy perspectives for tomorrow's farming and about the future of phosphate fertilisers presented the latest premium, specialty and value-added fertiliser products and discussed the market potential for enhanced efficiency fertilisers, micronutrients and bio-stimulants. Discussions focused on liquid or 100% soluble fertilisers, coated fertilisers, precision placement and organic acid complexes, as innovative approaches to increase the nutrient use efficiency of phosphate fertilisers. The conference also offered Technical Showcase sessions and technology presentations, covering new designs and processes for phosphoric acid production, sulphuric acid, fertiliser granulation and finishing, environment and sustainability, mining and phosphate rock beneficiation.

"Phosphates 2020" will take place 8-10 March 2020 in Paris. "Phosphates" Conference information, CRU <https://events.crugroup.com/phosphates/home>

## Calls, consultations and projects

### ManuResource 2019 - call for papers open to 31st May



The biennial international conference [ManuResource 2019](#) on manure processing and resource and nutrient recovery from manure will take place 27-28 November 2019 in Hasselt, Belgium (80 km East of Brussels, 1h20 by train). A call for papers (abstracts) is [open until 31<sup>st</sup> May](#). Topics targeted are: use of manure and derived products as fertilisers, innovations in new products derived from manures, manure and digestate treatment technologies and resource recovery, and environmental impact of manure management.

ManuResource 2019 conference website [www.vcm-mestverwerking.be/en/manuresource/15533/manuresource-2019](http://www.vcm-mestverwerking.be/en/manuresource/15533/manuresource-2019)

## Phosphorus Fact Sheet – for comment

ESPP has published a draft “[Phosphorus Fact Sheet](#)”. The objective is to provide in a readily accessible form, supported by reference sources, key numbers and data relating to phosphorus production, uses, environmental impacts and recycling, in order to offer in one place answers to often asked questions. This responds to the issue that for many aspects of the phosphorus cycle, data is not easily available, or published data is contradictory or out of date, or confusing because of use of different units (tonnes of rock, of phosphorus, of  $P_2O_5$  ...). Best estimates are made of how much phosphorus goes to different applications: agriculture (much the biggest use: c. 87% to fertilisers and 7% to animal feed), fire safety, batteries, food and beverage ... Estimates are also provided on phosphorus in food, in sewage, phosphorus “use efficiency” ... The objective is not to have fully scientifically justified numbers, but estimates which are considered realistic by competent stakeholders. Any comments are welcome: on the estimated data, on the sources used, or for other data on aspects of phosphorus management which it would be useful to include.

ESPP Phosphorus Fact Sheet for comment <https://phosphorusplatform.eu/images/download/ESPP-Phosphorus-fact-sheet-v21-4-19.pdf>

## ECHA consultation open on microplastics may impact fertilisers



The European Chemical Agency (ECHA) has launched a [public consultation](#), open to 20<sup>th</sup> September 2019, on a proposed restriction on “intentionally added microplastics”. This would, if implemented, effectively ban the use of microplastics in any product where they are susceptible to reach the environment, with exemptions for biodegradable polymers and

for some very specific uses. The proposed ban would cover microplastics particles where are dimensions are 1nm – 5mm. The proposal refers to the REACH definition of polymers, and specifies exemption of non-chemically modified natural polymers and biodegradable polymers (definition of biodegradability to be defined). ECHA have stated that around 36 000 ton/year of microplastics are released into the environment in Europe. Fertilizers Europe initial estimates suggest that, of this, only around 7 000 t/y of microplastics are used in fertilisers, as a consequence of polymer use in pelletisation, anticaking or to encapsulate controlled-release fertilisers. Fertilizers Europe is currently working to collect more information about applications and quantities of polymers susceptible to be classified as microplastics. A five year implementation delay is proposed by ECHA, but Fertilizers Europe states that this may be too short because bio-degradable alternatives for slow-release fertiliser encapsulation are not readily available today and replacement of some of the anticaking products will require extensive work to implement in different fertiliser products and production processes.

ECHA consultation on microplastics, open to 20<sup>th</sup> September 2019 [https://ec.europa.eu/growth/content/echa-public-consultation-restriction-dossier-microplastics-intentionally-added-products\\_en](https://ec.europa.eu/growth/content/echa-public-consultation-restriction-dossier-microplastics-intentionally-added-products_en)

## US phosphorus platform launches “Challenge”



**Sustainable  
Phosphorus  
Alliance**

SPA (Sustainable Phosphorus Alliance, North America) has launched a “[Phosphorus Sustainability Challenge](#)”. Organisations, large or small, are invited to publicly commit to “lower their phosphorus footprints”. The objective is to raise awareness about the role of phosphorus in global food security and water quality. Organisations making commitments under the Challenge will receive public recognition, and will see how their efforts contribute to larger scale sustainability

impacts. Commitments are invited on the following themes: using phosphorus more carefully in crop production and animal operations, sustainably recycling phosphorus, reducing food system waste, recovering phosphorus pollution from surface waters, removing phosphorus from human and animal waste streams, improving the efficiency of phosphorus mining, among others.

SPA Phosphorus Sustainability Challenge, launched 5<sup>th</sup> April 2019 [www.psustainabilitychallenge.org](http://www.psustainabilitychallenge.org) and on twitter [#PhosphorusChallenge](https://twitter.com/PhosphorusChallenge)

## SYSTEMIC survey on digestate treatment



The EU Horizon 2020 project “[SYSTEMIC](#)” has launched an international [survey](#) of anaerobic digester (biogas plant) operators, to (anonymously) collect data on digestate treatment, including treatment routes installed, impacts and performance and costs. The data will serve to inform a database and tool on digestate treatment and digestate nutrient recycling technologies. The survey is available in English, Dutch, Italian, French, Spanish and German. Participants responding to the survey may win a costs-covered participation to a SYSTEMIC meeting and site visit.

SYSTEMIC “Request for data from biogas plants on treatment of digestate” – survey <https://www.systemicproject.eu/3114>

## LIFE-CHIMERA chicken manure to fertiliser survey

The EU LIFE project “[CHIMERA](#)” (Chicken Manure Exploitation and Revaluation) has launched an online [survey](#) of experts and stakeholders to understand interest, opinions and knowledge in the sectors of agriculture, fertilisers, waste-to-energy and regulators. The CHIMERA project will build and test a pilot plant to treat chicken manure on-farm by combustion, producing energy and a NPK bio-based fertiliser.

LIFE-CHIMERA on-line survey: [www.life-chimera.eu/chimera-project-needs-your-contribution](http://www.life-chimera.eu/chimera-project-needs-your-contribution)

## Call for papers: resource recovery from waste water

Open to 1<sup>st</sup> July 2019, [call](#) for papers for 'Water Research' journal special issue "Resource recovery from water: from concept to practice". In coordination with abstracts for the IWA Resource Recovery Conference ([IWARR2019](#)), Venice, 8-12 September. Topics targeted are: pilot scale demonstration of resource recovery technologies, synthesis of value-added products, linking value chains, perspectives on resource recovery in next-generation waste water infrastructure, financing and policy, and societal opportunities and barriers.

Call for papers open to 1<sup>st</sup> July 2019, Water Research special issue [www.journals.elsevier.com/water-research/call-for-papers/resource-recovery-from-water-from-concept-to-practice](http://www.journals.elsevier.com/water-research/call-for-papers/resource-recovery-from-water-from-concept-to-practice)

IWA Resource Recovery conference IWARR2019 Venice 8-12 September 2019 [www.iwarr2019.org](http://www.iwarr2019.org)

## Projects

### Local farmers group develops dairy farm nutrient tool



The [KringloopWijzer](#) project ("CycleSmart"), in eastern Netherlands since 2013, with Wageningen WUR, has developed Fertile Circularity tool for dairy farmers. Some 350 farmers and nearly 20 agricultural contractors in the region are today participating. Farmers pay an annual fee of €300. The farmer enters data such as livestock numbers, fertiliser and manure use, animal feed, and the tool provides decision support. Farmers report increased crop yields with lower manure spreading rates, so enabling to respect Nitrates Directive obligations. Today the tool has been extended to greenhouse gas emissions. The local water company and a cattle feed supplier are also engaged in the project. Next objectives are to develop routes to reward farmers who positively use the tool to reduce environmental impacts, and pilots are underway with Rabobank and with dairy cooperative Friesland

Campina to provide financial incentives (interest rate discounts, higher milk price).

EIP-AGRI Newsletter May 2019 "Fertile Circularity. Effective bottom-up approach for dairy farmers"

<https://ec.europa.eu/eip/agriculture/en/news/inspirational-ideas-fertile-circularity>

KringloopWijzer project website (in Dutch) [www.vruchtbarekringloopachterhoek.nl](http://www.vruchtbarekringloopachterhoek.nl)

### Nutrient recycling for organic farming



The EU Horizon 2020 project [RELACS](#) (Replacing Contentious Inputs in Organic Farming Systems, or Improving Inputs for Organic Farming) aims to develop and facilitate adoption of environmentally safe alternatives to inputs currently regarded as problematic in organic farming, including reducing copper and mineral oil use in plant protection, sustainable solutions for livestock health and welfare and finding sustainable nutrient sources. The work package on fertilisers notes that both manure from non-organic farms and phosphate rock are considered "problematic" for organic farming and that recycling of nutrients from human waste / sewage sludge an urban organic waste is a "promising strategy to close nutrient cycles ... subject to stringent safety standards". The project aims to assess external nutrient input needs for organic farming, evaluate nutrient recycling technologies (product quality, risk assessment, socio-economic and environmental impacts, acceptability, regulation), develop a nutrient planning tool (matching needs to recycling) and provide overall recommendations of recycling technologies suitable for organic agriculture.

RELACS, a 29-partner Horizon 2020 project led by Research Institute of Organic Agriculture (FiBL) with IFOAM [www.relacs-project.eu](http://www.relacs-project.eu)

## European policies

### EU Fertilisers Regulation status



The final endorsement of the EU Fertilising Productions Regulation (FPR) is expected in Council before end May and publication of the Regulation in the Official Journal before end June 2019. There will then be a three year delay period before implementation, that is before companies can place on the market CE-Mark fertilisers. The JRC "STRUBIAS" report (struvite and recovered phosphate salts, biochars and pyrolysis materials, ash-based materials) is expected to be published at the same time, and then the European Commission will launch the necessary comitology processes to validate FPR annexe texts to bring these products into the FPR. ESPP participated at the EU Fertilisers Working Group meeting of 10<sup>th</sup> May which progressed a number of questions concerning implementation of the FPR, including:

- **Defining agronomic and safety criteria for by-products** (CMC11 of the FPR). It was clarified that this concerns both industrial by-products but also organic by-products (plant materials, food industry by-products - but not Animal By-Products, composts or digestates covered in specific CMCs) where such materials are used as components of future CE-mark fertilising products (as defined under the FPR, this includes soil improvers, liming materials, biostimulants ...). It was also clarified that this should concern agronomic “indirect” value, in a wide sense, so as to not exclude by-products used in fertilising products for non-agronomic purposes (such as additives used in processing, such as anti-caking or pelleting agents).
- **Mandate to CEN to develop harmonised standards** for testing methods, to accompany FPR implementation and CE-Mark validation. The current draft list of required new standards can be consulted at [www.phosphorusplatform.eu/regulatory](http://www.phosphorusplatform.eu/regulatory). This mandate is expected to be transmitted to CEN very rapidly after FPR publication.
- ESPP notes that the Commission proposes to request CEN to develop **standards to determine the “organic nitrogen content” of organic fertilisers, soil improvers, etc.**, which be transposable to discussions of “processed manure” under the Nitrates Directive.
- **Preparation of a European Commission “FAQ” (frequently asked questions and answers) document** on the FPR. This is proposed to replace the ‘Implementation Guide’ requested by ESPP and industry. Please send to ESPP any questions concerning understanding and implementation of the FRP which you think it would be useful to include in such a document, and ESPP can forward to the European Commission.

EU Fertilising Products Regulation (FPR) final adopted text: [www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+TA+P8-TA-2019-0306+0+DOC+PDF+V0/EN](http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+TA+P8-TA-2019-0306+0+DOC+PDF+V0/EN)

## NGOs and industry show common aims for Water Framework Directive refit

Positions from environmental associations and from the water service industry (Eureau) show convergence on key questions for the currently ongoing Water Framework Directive (WFD) re-evaluation. The environment NGOs (WWF, EEB, European Anglers Alliance, Wetlands International, European Rivers Network ERN) underline that the widespread failure to achieve “good” quality status for Europe’s waters and aquatic environments should not lead to question the WFD’s objectives, nor to push back compliance deadlines, but should instead question why Member States have failed to engage the necessary investments. Eureau (European Federation of National Associations of Water Services) also states that “the environmental objectives of the WFD are good and should be maintained” and that “timescale extensions should not be used as an excuse to avoid required investment in measures necessary to achieve ‘good status’ ... Frequent and non-transparent use of exemptions should be avoided and exemptions should be granted under rigorous planning and control”. Eureau particularly comment on the current ‘one out all out’ principle of the WFD, whereby if just one aspect of water quality fails to achieve the specifications for ‘good status’ then the water body is considered to fail the status objective. Eureau note this principle can be seen “as the cornerstone for the protection of water resources by putting pressure on Member States” but propose that a “separate assessment” should depict where some aspects have progressed towards ‘good quality’ status, as a tool to communicate partial successes and so improve public and political acceptance of investments.

Eureau position paper “Post 2027 scenario. Realising the Water Framework Directive”, 17<sup>th</sup> May 2018 [www.eureau.org/resources/position-papers](http://www.eureau.org/resources/position-papers)

EEB water page and “Report on making a case for the Water Framework Directive”, 20<sup>th</sup> September 2018 [www.eeb.org/work-areas/nature-agriculture/water](http://www.eeb.org/work-areas/nature-agriculture/water)

NGOs joint letter, 26<sup>th</sup> November 2018 [https://d2ouvy59p0dq6k.cloudfront.net/downloads/lre\\_letter\\_to\\_wd\\_nov\\_2018\\_final\\_1.pdf](https://d2ouvy59p0dq6k.cloudfront.net/downloads/lre_letter_to_wd_nov_2018_final_1.pdf)

## Individuals rights to action under the Nitrates Directive

The Advocate General of the European Court of Justice has issued an Opinion considering that individuals and public bodies, if affected by nitrates pollution, can require action by their Member State government under the EU Nitrates Directive 1991/271/EEC. The Opinion is in a case opposing an individual, a municipality and a water board against the Austrian State, because nitrates in their water extraction wells exceeded 50 mg/l. The Opinion concludes that individuals and public bodies should be able engage legal court action to obtain modification of Nitrates Directive Action Programmes if they are impacted by nitrate levels > 50mg/l if agriculture makes a “significant contribution”. The Opinion states that Nitrates Directive Action Programmes must “seek to prevent or eliminate” nitrate levels in groundwater >50 mg/l, must be reviewed to ensure that they are achieving this and that “all necessary additional measures or reinforced actions” must be taken.

ECJ Advocate General Juliane Kokotte, Opinion, Case C-197/18, date 28<sup>th</sup> March 2019

<http://curia.europa.eu/juris/liste.jsf?language=en&num=C-197/18>

## EU strategy on pharmaceuticals in the environment



The European Commission has published its strategy on pharmaceuticals in the environment, originally due in 2015. This identifies as the main sources to the environment: aquatic discharges from urban waste water treatment plants, manure spreading and aquaculture. Spreading of sewage biosolids is cited as one of five other sources, along with pets, grazing livestock, effluents from pharmaceuticals production plants (especially from those situated outside the EU), and improper waste disposal. The paper proposes no regulation, indicating actions such as awareness building, R&D support and increased

monitoring. However, assessments are specified of extension of the Industrial Emissions Directive scope to cover large dairy farms (IED already covers large pig and poultry production units) and of whether EU water policy sufficiently addresses pharmaceuticals in urban wastewater treatment. The EEB (European Environmental Bureau) reacted “It is shocking that active pharmaceutical ingredients remain the only group of chemicals whose environmental impacts remain largely unregulated at the EU level”. One of four “knowledge gaps” to be filled specified in the Commission strategy is “Cost-effective methods for reducing the presence of pharmaceuticals including antimicrobials in slurry, manure and sewage sludge to enable their use in the circular economy.”

“European Union Strategic Approach to Pharmaceuticals in the Environment”, European Commission Communication COM(2019) 128 final, 11<sup>th</sup> March 2019 [http://ec.europa.eu/environment/water/water-dangersub/pdf/strategic\\_approach\\_pharmaceuticals\\_env.PDF](http://ec.europa.eu/environment/water/water-dangersub/pdf/strategic_approach_pharmaceuticals_env.PDF)

## New ESPP member

### N2 Applied joins ESPP

# N2 — Applied

N2 Applied is a Norwegian technology development company, with the head office in Oslo and a test centre in Svene. [N2 Applied](#) is a catalyst and an incubator for high-tech initiatives related to nitrogen. N2 Applied has developed technology to enable on-farm processing of manure or biogas

digestate to produce a nitrogen fertiliser. Using renewable electricity and air, a plasma reactor fixes nitrogen by splitting the N<sub>2</sub> and O<sub>2</sub> molecules in air into N and O atoms to generate nitrogen oxides. These nitrogen oxides react with ammonia in manure or digestate to form ammonium nitrate, so lowering pH and stabilising the nitrogen, reducing ammonia and greenhouse gas emissions during storage and field application. After solid/liquid separation the liquid fraction of manure or digestate can be managed as a liquid nitrogen fertiliser, compatible with organic farming (depending on the manure and digestate substrate inputs). Most of the phosphorus will remain in the solid fraction. N2 Applied joins the ESPP network to share knowledge and collaborate on efficient and sustainable nutrient management in agriculture.

N2 Applied website [www.n2applied.no](http://www.n2applied.no)

See also: “Plasma Chemistry and Plasma Processing”, Graves et al., *Plasma Chemistry and Plasma Processing*, Jan. 2019, vol. 39, Issue 1, pp 1–19 <https://doi.org/10.1007/s11090-018-9944-9>

## United Nations moves forward on nitrogen cycle

### United Nations conclusion meeting of GEF nitrogen project



ESPP’s President, Ludwig Hermann, took part 26 - 27 April 2019, United Nations Headquarters, Nairobi, Kenya, in the Close-Out meeting of the GEF (Global Environment Facility) nitrogen project “[Global Nutrient Cycle](#)” (GNC), executed by the Global Programme of Action for the Protection of the Marine Environment from Land Based Activities (GPA). This meeting assessed achievements and outcomes of this research project, and discussed successor initiatives, in particular the GEF-Towards an International Nitrogen Management System ([INMS](#)) project. Meetings of the Global

Partnership on Nutrient Management ([GPNM](#)) and the Global Wastewater Initiative ([GW<sup>2</sup>I](#)) discussed cooperation between these two UN partnerships, particularly concerning nutrient losses from wastewater streams, see below. Action will be coordinated with the Sustainable Development Goals (SDGs), the recently adopted UNEA-3 resolutions on combatting water, air and soil pollution, and UNEA 4 resolutions on land-based pollution and sustainable nitrogen management ([UNEA](#) United Nations Environment Assembly). These meetings were followed by the fourth meeting of the International Nitrogen Management System (INMS) Project meeting, (GEF-funded, implemented by UN Environment and the Centre for Ecology & Hydrology CEH). This particularly discussed implementation of the resolution on ‘Sustainable Nitrogen Management’ adopted during the fourth session of the United Nations Environment Assembly (UNEA-4) 19<sup>th</sup> March 2019, see below.

GEF nitrogen project “[Global Nutrient Cycle](#)” (GNC) project [www.nutrientchallenge.org/gef-global-nutrient-cycling-gnc-project](http://www.nutrientchallenge.org/gef-global-nutrient-cycling-gnc-project)

International Nitrogen Management System (INMS) website [www.inms.international](http://www.inms.international)

UNEA United Nations Environment Assembly <http://web.unep.org/environmentassembly/un-environment-assembly-and-governing-council>

### United Nations resolution on nutrient management



The United Nations Environment Assembly [UNEA](#) adopted, at its fourth session 15<sup>th</sup> March 2019, a resolution on ‘[Sustainable Nitrogen Management](#)’ (UNEP/EA.4/L.16). The session brought together five Heads of State and 157 ministers and deputy ministers. The text recognizes the multiple pollution threats and environmental impacts of anthropogenic reactive nitrogen, including contributing to air pollution and

greenhouse gas (GHG) emissions. The resolution calls on UNEP “to consider the options to facilitate better coordination of policies across the global nitrogen cycle at the national, regional, and global levels, including consideration of the case to

establish an intergovernmental coordination mechanism on nitrogen policies”, in order to achieve the Sustainable Development Goals (SDGs). It also suggests coordination of existing platforms relevant to nitrogen management, and supports the sharing of information concerning “emerging technologies for recovery and recycling of nitrogen and other such nutrients”.

SDG Update <https://sdq.iisd.org/news/unea-4-calls-for-strengthened-approach-to-sustainable-nitrogen-management>

## Global Partnership on Nutrient Management (GPNM)



Global Partnership on Nutrient Management (GPNM) is organised by United Nations Environment (Global Programme of Action for the Protection of the Marine Environment from Land Based Activities, GPA), to bring together stakeholders, scientists and governments to work together on nutrients at the global level. For the first time, GPNM met together with Global Wastewater Initiative (GW<sup>2</sup>I), also organised by GPA. Outcomes included a decision to restructure the two committees to be more effective, the objective to work with the fertiliser industry to encourage the recycling of nutrients from wastewater, development of a resolution for the 2021 United Nations Environment Assembly on re-use of wastewater, engagement with development banks, collaboration with cities on good practices in wastewater treatment and nutrient management, continue to develop the Global Nutrient Management

Toolbox (see ESPP eNews n°32).

GPNM (United Nations Environment, Global Partnership on Nutrient Management) website: [www.unenvironment.org/explore-topics/oceans-seas/what-we-do/addressing-land-based-pollution/global-partnership-nutrient](http://www.unenvironment.org/explore-topics/oceans-seas/what-we-do/addressing-land-based-pollution/global-partnership-nutrient)

## Nutrient and organics recycling

### Netherlands fertiliser industry supports mineral - organics synergy

Fertilizers Netherlands [calls](#) to break down the differences between mineral and organic fertilisers, stating that they complement each other. The call is in the organisation’s new vision, Kunstmest 4.0. It suggests that regulations can generate unnecessary contradictions between the two types of fertilising product. Anthony Zanelli, ICL Fertilisers, chair of the organisation, states that “central to this is the goal of using more circular raw materials, as well as advice to use fertiliser according to the 4R’s: right product, right quantities, right place, right time”. Fertilisation, the organisation says, should be based on the use of unprocessed organic fertilising materials, supplemented as appropriate with high-quality processed fertilisers.

“Meststoffen Nederland: basis organische mest” (in Dutch) [www.mestverwaarding.nl/kenniscentrum/337/meststoffen-nederland-presenteert-haar-visie-op-kringlooplandbouw](http://www.mestverwaarding.nl/kenniscentrum/337/meststoffen-nederland-presenteert-haar-visie-op-kringlooplandbouw) and on Youtube (in Dutch) [www.youtube.com/watch?v=lzaQNSFS3Kg&feature=youtu.be](https://www.youtube.com/watch?v=lzaQNSFS3Kg&feature=youtu.be)

### Recovered nitrogen salt solutions compared to commercial fertilisers

Fertiliser performance for two recovered ammonium salt solutions were [compared](#) to commercial nitrogen fertiliser CAN (calcium ammonium nitrate). The recovered salt solutions were: ammonium sulphate solution, from air cleaning from a pig farm in Merkem, Belgium (sulphuric acid air scrubber); ammonium nitrate solution, from ammonium stripping of digestate liquid fraction, from an anaerobic digester treating a mixture of pig and horse manure and food waste (Detricon, Gistel, Belgium). The ammonium sulphate solution was 14% dry matter, and contained 0.29% organic carbon (recalculated to % DM), the ammonium nitrate solution was 48% DM and 0.21 organic carbon (% of DM). Data for contaminant levels are not provided, but these are expected to be low and related to contaminants in the sulphuric acid used (not from the materials treated). The nitrogen present in the recovered salt solutions was 100% in mineral form. Fertiliser performance was compared in lettuce pot tests (one fertiliser dose) and in full scale maize field trials (one fertiliser dose, in addition to application of animal manure, as practised by farmers). The recovered salts showed the same (or sometimes better) crop yield and nitrogen efficiency compared to commercial CAN fertiliser. No differences in nitrogen leaching were found. Overall, it seems that any differences in fertiliser performance are not because the ammonium salts are recovered, but may be related to the different chemical nature of the mineral nitrogen present.

“Production and performance of bio-based mineral fertilizers from agricultural waste using ammonia (stripping-)scrubbing technology”, I. Sigurnjak et al., Waste Management 89 (2019) 265–274 <https://doi.org/10.1016/j.wasman.2019.03.043>

### ECN – Vlaco workshop on composts and digestates

A [workshop](#) organised by the [ECN](#) (European Compost Network) and [Vlaco](#) (Flanders compost organisation) in Antwerp, 26<sup>th</sup> February, discussed how to establish markets for composts, with participants from the waste sector, growing media, policy makers and researchers. Adrie Veecken, ECN, presented the challenges for increasing the use of composts in growing media, noting as advantages low cost, nutrient content, possible disease suppression effects, public demand to replace peat and societal pressure to recycle organic wastes, but as obstacles the lack of uniformity and inferior physical properties, salinity, high pH, and possible phytotoxicity, plant pathogens and heavy metals. He presented the ECN “[Guidelines. Specification for the use of quality compost in growing media](#)”. Elke Vandaele, Vlaco underlined the importance of input material selection, process control, quality control of end-product and appropriate use of the final product. He noted the [SOILCOM](#) project developing the use of compost for horticulture and ornamentals. Nele Ameloot, Greenyard Horticulture and Growing Media Europe, noted that use of compost in growing media has nearly doubled from around 3% in 2015 to 6% in 2017 (data from Belgium). She underlined that composts for use in growing media should be well selected and produced with care. Composts can be very different, as demonstrated by trials of different composts on crops showing very different growth results. The dose of composts

in growing media should not exceed 20%, as higher doses may damage crops. Composts used in growing media must thus be individually selected and used appropriately. The workshop conclusions note the potential for local recycling of organic materials (circular economy) and underline the need for quality in compost and digestate production, and for quality control assurance, the need to improve consistency of product quality, and the importance of tailor made final products for specific uses.

ECN "Guidelines. Specification for the use of quality compost in growing media" [www.compostnetwork.info/ecn-guidelines-for-use-of-quality-compost](http://www.compostnetwork.info/ecn-guidelines-for-use-of-quality-compost)

SOILCOM project website [www.northsearegion.eu/soilcom](http://www.northsearegion.eu/soilcom)

World Resource Forum 2019, workshop on compost and digestate, 26<sup>th</sup> February 2019 [www.compostnetwork.info/workshop-at-wrf2019](http://www.compostnetwork.info/workshop-at-wrf2019)

## ECN report on biowaste management in Europe



The European Compost Network (ECN) has published a 60-page status [report](#) on biowaste collection, treatment and markets in Europe, based on a joint survey carried out with ISWA (International Solid Waste Association) 2017-2018 covering 17 EU countries plus Norway, compared to Eurostat 2016 data. Biowaste makes up an average of 37% (77 Mt/y for the 18 countries) of municipal solid waste (208 Mt/y). The updated Waste Framework Directive (see ESPP eNews [n°24](#)) requires separate collection of biowastes by end 2023 whereas the level today is only around 60% in the 18 countries. Of biowaste currently collected in these countries, around 64% is composted, 24% is anaerobically digested (AD) and 10% undergoes composting and AD. This treated biowaste (18 countries) represents a recycling potential of 129 000 t/y nitrogen, 42 000 t/y phosphorus and 3.5 million t/y of organic carbon (of which 1.8 Mt/y of stable

humic matter). This corresponds to around 1.5% of use of inorganic nitrogen fertiliser, and 4.3% of use of inorganic phosphate fertiliser, for these 18 countries.

"ECN Status Report 2019. European Bio-Waste Management. Overview of bio-waste collection, treatment and markets across Europe", ECN, 60 pages, sponsored by RETERRA, ISBN 978-3-9820825-1-6 [www.compostnetwork.info/download/ecn-status-report-2019-european-bio-waste-management-overview-of-bio-waste-collection-treatment-markets-across-europe-2](http://www.compostnetwork.info/download/ecn-status-report-2019-european-bio-waste-management-overview-of-bio-waste-collection-treatment-markets-across-europe-2)

## Supercritical Water Gasification of sewage sludge

A research [paper](#) from Japan (Amrullah 2017) presents testing of a laboratory scale, continuous Supercritical Water Gasification (SCWG) reactor for carbon and phosphorus (P) recovery from sewage sludge. The reactor was a 12m long, 2.2 mm internal diameter heated tube, operated at up to 0.9 l/hour, pressure 25 MPa, at up to 600°C. Sewage used was from a municipal sewage works (not specified whether using chemical or biological P-removal, sludge dewatering process not specified) with a dry matter content of just over 20%. At 600°C and residence time of one minute, around 80% of carbon was converted to gaseous forms with around half of this as hydrogen or methane and the remainder carbon dioxide (near zero carbon monoxide), that is a low level of potential energy recovery. Up to 60% of the total phosphorus in the sewage sludge was converted to inorganic phosphate in the outflow liquid fraction, so potentially available for phosphorus recovery (e.g. phosphate salt precipitation). No information is provided regarding the presence of contaminants or ions such as iron in the treated liquid fraction, nor of possible uses or disposal of the liquid and solid fractions. In a second [paper](#) (Chen 2019) SCWG was tested for phosphorus recovery from cyanobacteria. In this case, a 300 litre batch reactor was used (to treat 33 ml water content), at similar temperatures/pressure to above, and different added reactants were tested, showing that potassium hydroxide at 6% by weight could result in around 75% of phosphorus transfer to the liquid fraction, so potentially available for phosphorus recovery.

"Supercritical water gasification of sewage sludge in continuous reactor", A. Amrullah & Y. Matsumura, *Bioresource Technology* 249 (2018) 276–283 <http://dx.doi.org/10.1016/j.biortech.2017.10.002>

"Transformation of phosphorus during sub- and supercritical water gasification of dewatered cyanobacteria and one-step phosphorus recovery", C. Chen et al., *J. Supercritical Fluids* 147 (2019) 188–193 <https://doi.org/10.1016/j.supflu.2018.08.009>

## Finnish Quality Assurance Scheme for organic recycled nutrient products is published

LAARA laaturavinnehanke, a Finland Government Key Project (Ministry of the Environment), has finalised and [published](#) its national Quality Assurance Scheme (QAS) for organic recycled nutrient products. The steering group includes the Finnish Food Authority, Finland Environment Institute, the national Ministry of Agriculture, biogas and organic fertiliser companies and the Central Union of Farmers and Forest Owners (MTK). The scheme will cover organic fertilising materials produced from municipal and industry biowastes, biomass, manure, ashes and sewage sludge. Deliverables includes a QAS Quality Handbook, a process for testing QAS in companies and a QAS database. The objective is to see the first products compliant with the new QAS on the market in early 2020

"Finnish quality assurance system for the recycled nutrient products" project [www.laatulannoite.fi/in-english](http://www.laatulannoite.fi/in-english)

## Food policy

### Should phosphorus be included in food labelling?

An [article](#) by Dr. Lea Borgi, hospital kidney specialist, suggests the inclusion in US food labelling (Nutrition Facts Label) of total phosphorus (P) content and added phosphate (food additives). Dr. Borgi notes that in 2015 a Dietary Guidelines Advisory Committee report concluded that this was not necessary because dietary intakes are below the tolerable upper limit of intake of



the dietary reference intake (4gP/day). Average intakes are however around twice the Recommended Dietary Allowance (RDI: 0.7 gP/day for adults). She indicates that c. 60% of P in meat in food is actually absorbed into the body in the gut, only c. 40% of P in plants, but that the percentage absorption of P in mineral food additive phosphates is thought to be higher – however data is lacking on food phosphorus absorption rates. In 2016 both the [American Society of Nephrology](#) and the [National Kidney Foundation](#) urged the FDA (US Food and Drugs Administration) to make phosphorus content mandatory in food labels. Currently a draft bill ([H.R.5425](#)) under discussion in the US Congress proposes to require labelling of phosphorus content of foods (total P) either with the indication “contains phosphorus” with indication of P/ serving or as mgP in the Nutrition Facts Panel.

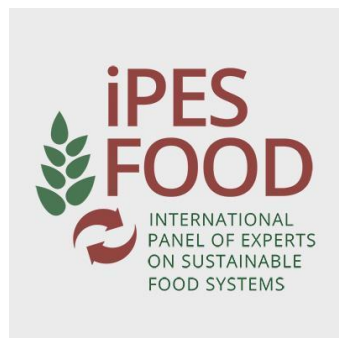
“Inclusion of Phosphorus in the Nutrition Facts Label”, L. Borgi, *Clin J Am Soc Nephrol* 14: 139–140, 2019,  
<https://doi.org/10.2215/CJN.07230618>

American Society of Nephrology position 2016 [www.regulations.gov/document?D=FDA-2012-N-1210-0251](http://www.regulations.gov/document?D=FDA-2012-N-1210-0251)

National Kidney Foundation position 2016 [www.regulations.gov/document?D=FDA-2012-N-1210-0275](http://www.regulations.gov/document?D=FDA-2012-N-1210-0275)

Draft bill to Congress H.R.5425 “Food Labeling Modernization Act of 2018” [www.congress.gov/bill/115th-congress/house-bill/5425/text](http://www.congress.gov/bill/115th-congress/house-bill/5425/text)

## NGOs call for EU food policy



Over thirty organisations have signed an [open letter](#) to European election candidates calling them to commit to engage a coherent EU food policy and to install a European Commission Vice-President responsible for food. The initiative, led by [IPES-Food](#) (see ESPP eNews n°17) is signed by organisations including Greenpeace, EEB (European Environmental Bureau) and IFOAM (the European organic farming federation). It calls that the EU should develop an integrated EU food policy over the course of the next legislature and that there should be a European Commission Vice-President responsible for ensuring the sustainability of food systems with a mandate to coordinate the efforts of different Directorates. The letter mentions sustainable development goals (SDGs) and many impacts of the food system (climate change, water, soil, biodiversity, fish stocks, animal welfare, chemical pollution, food waste and loss, farmers incomes, rural communities, obesity and non-communicable diseases, food affordability, food security) but not nutrients.

Open letter 7<sup>th</sup> May 2019 [www.ipes-food.org/pages/open\\_letter\\_Spitzenkandidaten](http://www.ipes-food.org/pages/open_letter_Spitzenkandidaten)

## ESPP members

Up to date list of members: [www.phosphorusplatform.eu/members](http://www.phosphorusplatform.eu/members)



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