



NERM 2024

16-17 April 2024
Brussels & hybrid

Nutrients in Europe Research Meeting

Towards closing nutrient cycles for a sustainable future, from R&D to implementation

16th – 17th April 2024 – Brussels & online

plus PhD students meeting and networking event (15th April) & site visits (17th April afternoon)

NERM is organised by ESPP and the Horizon 2020 projects
FERTIMANURE, LEX4BIO, RUSTICA, SEA2LAND, WALNUT

Integrating the 6th PERM (Phosphorus in Europe Research Meeting)

Programme

15 th April 2024 13h00 – 17h00	<p>NERM pre-events – details here</p> <ul style="list-style-type: none"> PhD school/ young researcher day (Organised by Biorefine Cluster Europe) Networking Event (Organised by CETENMA)
DAY 1 – Tuesday 16th April 2024	
8h30 – 9h00	Registration
9h00 – 10h15	<p>Welcome and opening (Robert van Spingelen, ESPP)</p> <p>Plenary session: Keynotes presentations</p> <ul style="list-style-type: none"> “EU R&I on nutrient recycling and managing” (Luis Sánchez Álvarez, European Commission DG AGRI) EUROFEMA (organic fertilisers industry federation) (Leon Fock) “Societal impact of publicly funded Circular Bioeconomy projects in Europe” (Ana Sofia Brandao, Instituto Politécnico de Bragança) <p>SESSION 1. Nutrient Recovery Technologies</p> <ul style="list-style-type: none"> “FERTIMANURE – From Farm to Market, upcycling manure to improved fertilising products” (Laia Llenas, BETA TC)
10h15 – 10h45	Coffee break
10h45 – 12h15	<p>Parallel sessions (moderated by the RUR-08 sister project partners) - Nutrient Recovery Technologies</p> <ol style="list-style-type: none"> I. Manure management and valorisation II. Closing wastewater cycling for nutrient recovery III. Other successful cases of nutrient recovery
12h15 – 13h30	Lunch & poster session
13h30 – 15h00	Plenary session

	<ul style="list-style-type: none"> • Parallel session reports • Expert panel discussion – Current challenges for a successful implementation and adoption of nutrient recovery technologies (moderated by <i>Sergio Ponsá</i> (BETA-UVIC)); <i>Oscar Schoumans</i> (WENR, FERTIMANURE); <i>Ludwig Hermann</i> (PROMAN); <i>Lennert Dockx</i> (Aquafin); <i>Javier Martín Sanz</i> (Veolia) <p>SESSION 2. Biobased fertilising products</p> <ul style="list-style-type: none"> • European Commission (<i>Silvia Maltagliati</i>, DG RTD) • “Nutrient flows in the EU and potential for reducing EU’s dependency on imported fertilisers”, LEX4BIO project (<i>Kari Ylivainio</i>, LUKE)
15h00 – 15h30	Coffee break
15h30 – 17h00	<p>Parallel sessions (moderated by the RUR-08 sister project partners) – Bio-based Fertilising products quality, sustainability and market uptake</p> <ol style="list-style-type: none"> I. BBFs Testing results from sister projects II. Other BBF testing and nutrient budgets III. Sustainability, market and acceptance of BBFs
17h00 – 18h30	Networking drinks and poster session
DAY 2 – Wednesday 17th April 2024	
9h00 – 11h00	<p>Plenary session</p> <ul style="list-style-type: none"> • Parallel session reports • Expert panel discussion – Path to market of Bio-based fertilisers (moderated by <i>Robert van Spingelen</i> (ESPP)); <i>Ignasi Salaet</i> (FERTINAGRO Biotech); <i>Ana-Marija Spicnagel</i> (IPS Konzalting); <i>Else Bünemann</i> (FiBL); <i>Erik Meers</i> (UGENT); <i>Daniel Egas</i> (BETA-UVIC) <p>SESSION 3. Increasing the adoption and impact of the R&D results</p> <ul style="list-style-type: none"> • Keynote presentations from: <ul style="list-style-type: none"> ○ “AKIS and the EU CAP Network: EIP-AGRI Support Facility” (<i>Margarida Ambar</i>, EU Cap Network) ○ “EU-FarmBook, the point of reference for practitioners” (<i>Peter Rakers</i>, Esset Engage) ○ EU Operational Groups (NUTRI-KNOW) (<i>Victor Carbajal</i>, BETA TC) - “NUTRI-KNOW Thematic Network: Exchanging easy-to-understand nutrient management knowledge with farmers”
11h00 – 11h30	Coffee break
11h30 – 13h00	<ul style="list-style-type: none"> • From R&D to market – Conclusions from successful projects <ul style="list-style-type: none"> ○ H2020 SYSTEMIC (<i>Oscar Schoumans</i>, WENR) – “Improving nutrient circularity by technical innovations at large scale biogas plants” ○ BBI B-FERST (<i>Javier Brañas</i>, FERTIBERIA) – “Circular economy from biowaste in the fertilizer industry. B-FERST outcomes” ○ LIFE RE-FERTILIZE (<i>Anna Lundbom</i>, EasyMining) – “Demonstrating Aqua2N, a chemical process for nitrogen removal and recovery from liquid waste streams” ○ HOOP Project (<i>Elisa Gambuzzi and Martín Soriano</i>, CETENMA) <p>Questions, discussion</p>

	<ul style="list-style-type: none">• Final Panel with RUR-08 project coordinators – Nutrient recovery and bio-based fertilisers – Future R&D Needs and roadmap (moderated by <i>Chris Thornton, ESPP</i>): <i>Kari Ylivainio (LUKE), Laia Llenas (BETA TC), Francisco Corona (CARTIF), Miriam Pinto (NEIKER), Tessa Avermaete (KU LEUVEN)</i> <p>Final remarks and closing</p>
13h00 – 14h00	Light lunch
14h00 – 18h00	Site visits to nutrient recovery facilities (optional) – see here

Registration

Open on [Eventbrite](#) until 31st March 2024. **Please indicate during [registration](#) if you are interested in participating to a site visit, and to which one (see below).**

NERM pre-events

Monday 15th April 2024 (optional)

13h00 - 17h00



PhD school/ young researcher day (Organised by Biorefine Cluster Europe) @ Catalan Government (Rue de la Loi, 227, 1040 – Brussels)

- Presentation of the **RecaP project**, a consortium dedicated to exploring innovative P recovery techniques, strategies to enhance crop utilization of phosphorus, groundbreaking freshwater restoration methods, and the identification of barriers and enablers for policy and economic transformations supporting recycling
- **Nutrient recovery discussion**: can it be done sustainably, how to interact with farmers and policymakers, what is the future of biobased fertilizers? Engage with experts, make new contacts, and discover different angles of the nutrient challenge

15h30 - 17h00



Networking Event (Organised by CETENMA) @ European Committee of Regions (Rue Belliard 99/101, 1040 Brussels, room JDE 2253): *Fer-Play and Hoop Workshop to share the results and exchange knowledge with projects working along the same destination*

- The event aims to showcase insights gained from the HOOP and FER-PLAY projects, disseminating knowledge about establishing nutrient recovery value chains, emphasizing their economic, environmental, and social impacts (**FER-PLAY**)
- It will also highlight successful stories and best practices from public administrations (**HOOP**)
- This workshop seeks to convene representatives from cities and regions already engaged in or interested in initiating circular fertilizer initiatives. The goal is to unite these representatives with research and development entities actively promoting the adoption of these sustainable fertilizers
- Check the detailed programme [here](#)

SITE VISITS

Wednesday 17th April 2024 (optional)

14h00 - 18h00

- **FERTIMANURE - The Bio Sterco farm**

Detricon on-farm stripping-scrubbing unit to recover ammonium salts from pig slurry (Hooglede, Flanders, Belgium)

The Bio Sterco farm, located in Hooglede, Belgium, has the capacity to house 454 sows, 5 boars, and 5524. Additionally, it operates its own manure treatment facility, which has been operational since 2011 and currently has a maximum capacity of 52000 t y⁻¹. The manure treatment system comprises a conventional processing setup, featuring a centrifuge for mechanical separation, an activated sludge tank primarily focused on nitrification-denitrification (NDN) removal, and a settling tank to eliminate activated sludge from the effluent.

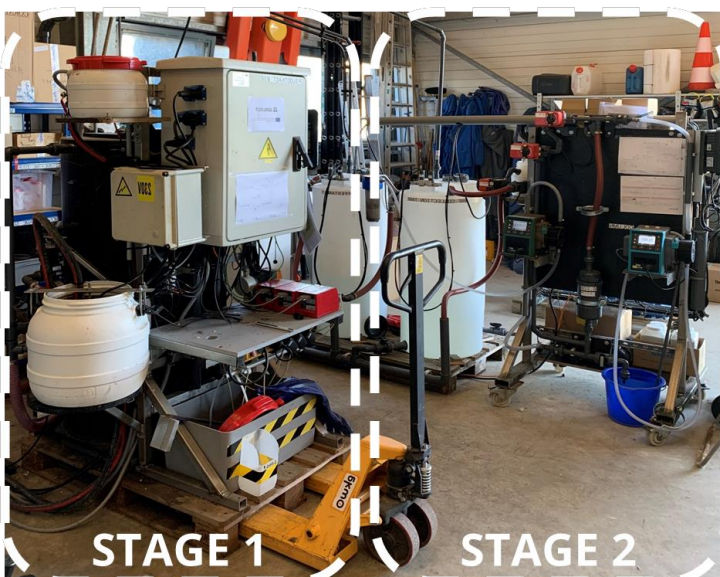
To enhance the treatment process, pure oxygen aeration tanks and an NH₃ stripping-scrubbing unit have been incorporated into the system. The NH₃ stripping-scrubbing unit, consisting of two vertical acrylate stripping columns and a scrubbing column, can process up to 20,000 t y⁻¹ of manure. Depending on the scrubbing acid used, it recovers either ammonium sulfate or ammonium nitrate.

Furthermore, the treatment installation incorporates a tertiary treatment pathway to refine the effluent from the NDN treatment into dischargeable water. This tertiary treatment involves a P-precipitation unit and a constructed wetland spanning 1268 ha. During the visit, participants will have the opportunity to inspect the various treatment steps implemented at the facility.



<https://www.youtube.com/watch?v=zhHmOtXkSOo>

- **WALNUT - Aquafin sewage nutrient recovery (Antwerpen, Belgium)**



Located in Aartselaar near Antwerp, the pilot works on the recovery of urban wastewater and sewage sludge. In the pilot led by Aquafin, raw municipal wastewater (1 m³/day) will be treated through a novel 2-stage technology: (1) In the first stage, high-rate activated sludge (HRAS) will focus on the removal of organic matter. Almost no nutrient (nitrogen and phosphorus) removal will occur due to the low sludge retention time. (2) In the second stage, nitrogen will be recovered by using zeolites as adsorption material. Furthermore, the regeneration of the saturated adsorption material will be investigated. Subsequently, the optimal resource recovery can be selected: straight use of the adsorbent as fertiliser, regeneration and production of a mineral fertiliser,

or a combination thereof.

[Operations start at the Belgium-based WalNUT pilot site! - Walnut \(walnutproject.eu\)](https://www.walnutproject.eu)

<https://phosphorusplatform.eu/nerm>