Events

13 November 2024: Regulatory status of algae grown using wastewater, wastes or ABPs

Brussels and online, Wed. 13th November 13h – 18h, legal status of biomass produced in wastewater treatment or with waste gas, manure or food waste inputs, and valorisation in fertilisers, feeds and industry. Presentation and discussion of legal analysis prepared for ESPP by Barry Love, Environmental Law Chambers, with user industries, algae production and processing experts, EU and national regulators.

Brussels and online, Wed. 13th November 13h – 18h, information and registration www.phosphorusplatform.eu/legalworkshop

21-22 January 2025: nutrient proposals for the new EU Circular Economy Act and CAP

The President of the European Commission, Ursula von der Leyen, plans an ambitious EU Circular Economy Act, to follow the second Circular Economy Action Plan (March 2020), replacing this Commission document by a regulatory act. Ms von der Leyen's mission letter for the new Commissioner for Environment, Water Resilience and a Competitive Circular Economy, Jessika Roswall, specifies that the new Circular Economy Act should include measures to create market demand for secondary materials and a single market for waste, especially for critical raw materials (phosphate rock is on the EU Critical Raw Material List since 2014, confirmed in the EU Critical Raw Materials Act 2024). ESPP will develop proposals for nutrients in this expected new Act.

The Common Agricultural Policy represents over 40% of the EU budget. The current CAP runs from 2023 to 2027. An interim evaluation report is expected in 2025. ESPP will develop proposals for integrating nutrient management (including the Green Deal and UNEP Biodiversity Convention 50% nutrient loss reduction objective) and nutrient recycling into the future CAP revision.

Two day meeting to discuss these two important policies and to develop proposals to input to the European Commission: ***21 (Circular Economy) and 22 (Common Agricultural Policy) January 2025****, Brussels and online, more information coming soon on https://www.phosphorusplatform.eu/policy2025*

Phosphorus use and recycling in intensive livestock: March 2025

Can intensive livestock be more phosphorus efficient than extensive or organic farming? Looking at P flows, P efficiency in feed, P-recycling, best nutrient management practices. UNEP uPcycle workshop, organised by BETA Technology Centre (University of Vic), with ESPP, hosted by Cooperl (the Brittany pig farm cooperative) and Roullier (feed and fertilisers). In Saint Malo and Lamballe, near Rennes, Brittany, France, 4-7 March 2025 (tbc). With site visits to the Saint Malo Minerallium (chemistry of minerals and phosphates), Roullier fertiliser and feed production and research, Cooperl experimental livestock technology research farm and Cooperl's manure and animal by-product reprocessing to energy and organic fertilisers. This workshop will be limited to 60 participants, with representatives of livestock farmers organisations, meat and dairy processers and distribution, animal feed industries, with selected experts from science and from P recycling.

If you would be interested to participate or present, please contact laia.llenas@uvic.cat

ESPP actions

Preparing for the new EU Circular Economy Act

ESPP has prepared or is developing several policy proposal documents. Your comments and input are welcome.

- Perspectives for EU water policy and for the Sewage Sludge Directive, in the context of the planned new EU Circular Economy Act (see above under 'Events') (14/10/24)
- ESPP input to Nenuphar questionnaire on EU policies on nutrient management Targets for Phosphorus "Reuse & Recycling" under the revised Urban Waste Water Treatment Directive (Jan. 2024, v4/10/24)
- Market pull policies to support nutrient recycling (Jan. 2024, v4/10/24)

ESPP policy documents are here : www.phosphorusplatform.eu/regulatory

Join the ESPP-EBA Consultants List

Have you worked with consultants on regulatory aspects of recycling, digestate and compost, waste status, fertilisers regulations, animal by-products? ESPP and the EBA are developing a list of consultants in such areas The list includes consultants and advisors in regulatory, and market topic, dossier preparation and registrations such as the EU Fertilising Products Regulation (FPR), national fertiliser legislation, Animal By-Product Regulation, REACH, organic farming, End-of-Waste criteria, and more. The goal of this list is to provide companies and organisations with contacts, along with details on each consultant's area of expertise and geographical coverage. Please note that this list is for informational purposes only and does not constitute a recommendation or endorsement of the listed consultancies.

If you can suggest a consultancy for inclusion, or if you wish to add your own consultancy to the list, please send details to info@phosphorusplatform.eu and sever@europeanbiogas.eu

Call for Policy Recommendations from R&D Projects

ESPP invites R&D projects to share their policy recommendations, contributing to the upcoming policy framework being developed by the European Commission. Current legislative efforts will have a significant impact on phosphorus recycling, nutrient stewardship, and include key measures such as the Circular Economy Act (see above), targets for sewage phosphorus reuse and recovery, and revisions to the Common Agricultural Policy.

ESPP is preparing a comprehensive overview of policy recommendations from EU-funded and other R&D projects. This effort will help highlight aligned proposals across projects and ensure relevant recommendations reach policymakers. All contributing projects will be credited in our summary, presented during our upcoming workshop in Brussels (with online access) on 21-22 January 2025 and submitted to EU policy makers.

If your project has developed any policy recommendations—whether as published proposals, conclusions from policy work packages, policy presentations, or draft documents—please share them with us: veronica.santoro@phosphorusplatform.eu and df@danielfrank-communications.com For inquiries or further information, feel free to contact us.

Animal By-Product webinar summary & conclusions

Bringing Animal By-Products into the EU Fertilising Products Regulation (FPR)

Over 400 participants joined the 2-hour webinar organised by ECOFI, Eurofema, EBIC and ESPP on recycling animal by-products (ABPs) to fertilisers on 17th September, with participation of the European Commission (DG SANTE, DG GROW Fertilisers).

The webinar was opened by Ludwig Hermann, ESPP Board. Regulatory challenges and circular economy value of animal by-product recycling were outlined by Kristen Sukalac (EBIC and ECOFI) and Leon Fock (Eurofema), the European federations representing the biostimulant and organic fertiliser industries.

Nutrient recycling value of ABPs

Leon Fock, Eurofema, underlined the importance of fertiliser recycling of animal by-products for both farmers and the food industry. Various animal by-products cannot be used in human food, animal feed, pet food or industry for regulatory – safety reasons or because of logistics, and so are used in fertilisers, so valorising nutrients and organic material. ABPs are often combined in organic fertilisers with other secondary materials, such as crop residues or plant-based food industry by-products, so that regulatory obstacles to the use of ABPs have impact many different organic fertilisers. A challenge is that there is little coherent data on the organic fertiliser industry so it is difficult to quantify ABP recycling to fertilisers today. Data is available in some countries or some sectors, but no aggregated nor European data. However, ABPs are probably the main source of phosphorus and of protein (nitrogen) to organic fertilisers.

Life Cycle Analysis (LCA) shows that ABP-based organic fertilisers offer low carbon footprint per nutrient content compared to both mineral fertilisers and to other recycling routes (see SOFIE2).

Kristen Sukalac, EBIC and ECOFI, underlined the current discrepancies between EU regulations on health (animal by-products) and policies for Circular Economy. Recycling of animal by-products to fertilisers and biostimulants is important to avoid waste of resources and to offer solutions to farmers, so contribute to the competitivity, resource efficiency and resilience of the EU agri-food sector. Guaranteeing safety remains essential, but the overall approach of animal by-product regulation needs to evolve to put more emphasis on upscaling revalorisation. The current regulations reflect the preoccupations of the mad cow crisis of the 1980's. A recent joint letter signed by 16 organisations (including ESPP) calls for a review of the Animal By-Product Regulation architecture to enable more flexibility in authorisation of recycling processes and products derived from ABPs, whilst continuing to ensure safety and environmental protection, improving institutional efficiency and protecting company confidential information.

EBIC & ECOFI proposals for ABP regulation compatible with Circular Economy

The current ABP Regulations do not deliver circularity for livestock production according to the waste hierarchy: use as food, feed, fertiliser / materials recycling, with combustion for energy as a last resort.

EBIC and ECOFI's proposals include:

- Harmonise 'core' dossier content and processes for ABPs for different end-uses (cosmetics, food, fertilisers …) with differences or additional requirements only where necessary for specific value chains,
- Validate safety by recognised overall criteria, with independent testing, rather than by defining "one-by-one" processes (ABP "standard methods"),
- Differentiate 'processing' (modification of an ABP) from 'transformation' (resulting in a completely different substance, e.g. incineration, hydrolysation),
- Restructure and consolidate the different existing Regulation and daughter regulations to facilitate understanding and implementation by users,
- Ensure coherent implementation.

Current regulatory status

Theodora Nikolakopoulou, European Commission DG GROW, explained that 'Derived Products' from ABPs can today be used in fertilising products in Europe under two different routes (in addition to on-farm use of e.g. manure):

- EU Fertilising Products Regulation (FPR), with End-of-Waste status. This requires that an ABP 'End-Point' has been defined under the ABP Regulations and is specified in the FPR,
- Under national fertilisers regulations, in which case veterinary controls and traceability apply.

Under the FPR, products derived from ABPs can be used either as such (under CMC10) or as inputs to further processing (under CMCs 3 = compost, 5 = digestate, 12 = precipitated phosphates, 13 = ashes/ash derivates, 14 = pyrolysis materials/biochars). However, in all cases, these materials need to have an 'End-Point' determined according to the ABP Regulation.

At present, processed manure is already covered by CMC 10 (under specified conditions, see the consolidated version of the FPR) and COM services are working on the inclusion of certain other derived products from ABPs (QLab study, assessment of derived products from ABP which have an 'End-Point' determined, according to Regulation 2023/1605):glycerine of Category 2 and 3 materials, and other Category 2 material resulting from biodiesel process and the production of renewable fuels

- Category 3 materials other than glycerine
- processed animal protein of Category 3 materials
- meat-and-bone meal of Category 2 materials
- blood products of Category 3 materials
- hydrolysed protein, including hydrolysed protein derived from residues coming from the leather or textile industry
- dicalcium phosphate and tricalcium phosphate
- horns, horn products, hooves and hoof products

Matjaz Klemencic, European Commission DG SANTE, explained the process for authorisation of an ABP or derived product under the EU Fertilising Products Regulation. The regulatory architecture is:

- The ABP Regulation (EC) 1069/200 provides for the legal bases, categorization and authorised uses of animal by-products;
- Implementing Regulation (EU) 142/2011 provides for safe processing methods of animal by-products in derived products;
- Commission Delegated Regulation (EU) 2023/1605 determines ABP 'End-Points' for certain organic fertilizers and soil improvers.

The 'End-point' is the point in the manufacturing chain at which the ABP derived product is considered to no longer pose any significant risk to public or animal health. Beyond this 'End-Point', it is no longer subject to the veterinary controls of Regulation (EC) 1069/2009. The 'End-point' defines to which input materials it applies, the processing conditions, and the final use (petfood; pharmaceuticals; biofuels; cosmetics; medical devices; fertilisers; …). End-Points are for a specific end-use (e.g. in fertilising products) and the ABP derived product is then subject to other relevant applicable legislation (e.g. national or EU fertilisers regulations, REACH …).

An 'End-Point' can only be defined by reference to a processing method specified in Regulation (EU) 142/2011 ("standard" or "alternative"). Additional processing methods can only be added to (EU) 142/2011 after an assessment by EFSA (European Food Safety Agency) of risks for health and the environment, following submission by a Member State (whose competent authority has assessed the proposed processing method). Use in EU fertilisers (with EU End-of-Waste status and without veterinary controls and traceability) in only possible modification of (EU) 142/2011 to add the additional processing method, after publication of a Commission Delegated Regulation defining the End-Point for use in fertilising products (DG SANTE) and after a Commission Delegated Regulation including the specified material into the FPR (DG GROW).

It is not possible for an ABP or "Derived Product" to be included in the EU FPR whilst retaining its ABP status. A material with an EU ABP End-Point can, on the other hand, be authorised for use under national fertilisers regulations, as well as under the EU FPR.

However, ABP derived materials can be used under national fertiliser regulations, without the processing method being included in (EU) 142/2011 and without an EU-defined ABP End-Point. In this case, the ABP derived product (used as fertiliser) remains subject to ABP veterinary controls and traceability.

An ABP End-Point for use in fertilising products does not provide "end of animal by product status" for any other use, so specifically does not modify exclusions under the Animal Feed Regulation 767/2009 (Annex II $1 and $5). It also does not modify the status of processed manure under the Nitrates Directive.

Examples of ABPs but not today authorised under the EU FPR

ESPP presented several examples of ABP materials that have been and/or are currently used in national fertilizers in EU Member States, with national authorization. To the industry's understanding, these uses have not shown any identified safety concerns and deliver satisfactory products to farmers and users:

- Category 1 Animal By-Product ash
- Alternative composting and anaerobic digestion processes
- Fish and aquaculture sludge

- Certain hydrolysed proteins
- Guano.

Martin Alm, EFPRA (European Fat Processors and Renderers Association), indicated that estimates suggest Europe generates around 1 million t/y of Cat1 ABP meat and bone meal (MBM). The ABP Regulation requires that this material is "disposed of" by incineration and this generates some 100 – 310 kt/y Cat1 MBM ash (some Cat1 material is disposed of by combustion in cement kilns, not generating ash). This ash contains maybe 10-30 kt P/y (which corresponds to 1-3% of annual P use in mineral fertilisers). Cat1 ash has been widely used as fertiliser in the UK for over a decade, and is also used as a fertiliser for forestry in Portugal. DG SANTE has mandated an Opinion from EFSA on the prion (BSE/TSE) risk of Cat1 ash, expected by May 2025 (possibly with then a second phase on contaminant risks). EFPRA has provided detailed answers to EFSA questions. ESPP has submitted a "Risk appraisal" report commissioned from SAFOSO (September 2024, see ESPP eNews n°90 and www.phosphorusplatform.eu/regulatory).

The objective is to obtain authorisation of Cat1 ash, and of phosphate fertilisers produced from processing of Cat1 ash, under FPR CMC13 and also clarity for Member State authorisation of Cat1 ash under national fertilisers regulations.

Stefanie Siebert, European Compost Network (ECN) and **Lucile Sever, European Biogas Association (EBA)**, summarised the problems currently encountered with alternative composting and anaerobic digestion processes.

The potential for nutrient recycling of digestates and composts is considerable. The EU Waste Framework Directive 2008/98/EC obliges separative collection of municipal organic wastes (by 31/12/2023). This will result in some 40 million t/y going to composting or anaerobic digestion. Separately collected municipal organic wastes ("biowaste"), which includes household kitchen wastes, can contain animal by-products and is classed a ABP category 3. Already in 2022, the development of renewable biogas production resulted in the production of some 28 million tonnes (dry matter) per year of agriculture-based digestate, much of which was from manure (a Cat2 ABP) with high nutrient value. This is expected to increase considerably with EU renewable energy objectives.

However, most compost and digestate is today produced, and used as organic fertiliser or soil improver under national regulations, with compost or AD processes which do not respect the ABP Regulation (EU) 142/2011 method specifications (which require 70°C for one hour residence time, particle size < 12 mm). The sanitisation requirements are either laid down in national rules or validated processes are authorised by national authorities and these vary significantly from one Member State to another.

ECN and EBA consider that the standard process requirements under ABPR (70 °C 1h 12mm) are not realistic and are not used in practice, and in particular are unsuitable for composting and anaerobic digestion of separately collected kitchen waste from households:

- The maximum 12 mm particle size is not suitable for composting (structured material is needed for air flow), biowastes and green wastes have larger particles, larger particles are used in both wet and dry anaerobic digestion processes
- The specified temperature > 70 °C is too high for microbiological decomposition

After extensive preparatory work, ECN submitted in July 2023 a proposal to include one alternative compost processing method into the ABP Regulations: tunnel composting 60°C, 48 h <200 mm and 55 C, 72 h <200 mm. EFSA delivered a positive Opinion in May 2024 (ESPP eNews n°87). ECN is now waiting for corresponding modifications to the EU Animal By-Products regulations 1069/2009 142/2011, which would enable use of these methods for EU fertilising products (FPR CMC3).

ECN and EBA consider that further alternative time-temperatures are needed and methods which have been validated by national authorities should be taken into account (by inclusion into EU ABP regulation End-Points). The current one-process-by-one-process approach to evidence collection, dossier preparation, EFSA assessment and finally possible modification of EU regulation annexes, is not feasible for industry (composting and digestion involve many SMEs and public organisations, using different methods in different countries) and is inefficiently time consuming for EFSA and for the European Commission. Without alternative time-temperature profiles, there can be expected to be no CE marked composts or digestates from ABP-derived materials, including from manure.

ESPP notes certain ABPs derived products, in particular "processed manure", can be used as inputs to FPR composts and digestates (CMCs 3 and 5) if they have reached the ABP End-Point before composting/digestion, even if the compost/AD process does not achieve the above ABPR standard processing criteria. This is unclear in 2023/1605 which refers only to use "in" fertilising products (not to use "in production of …"), but has been clarified by the European Commission in the EU FPR FAQ (Q8.31). Various processing methods are specified for manure and other ABPs in 142/2011, in addition to sterilisation. However, it is generally not economic for operators to carry out such "double processing" (hygienisation and then composting/anaerobic digestion – composting/digestion then hygienisation). For this reason, recognition is needed of other composting/anaerobic digestion processing methods in the ABP Regulation, and then into the FPR in CMCs 3/5.

Torhild Tveito, Norway Food Safety Agency, indicated that aquaculture in Norway alone produces already today more than 2 Mt/y of fish sludge (10% DM) and aquaculture is expected to double in the coming decade. Resulting phosphorus losses to the sea were estimated in 2019 at 14 ktP/y (Broch & Ellingson 2020), that is more than 1 ½ times Norway's mineral phosphate fertiliser use. Fish sludge is already generally collected and treated from inland (freshwater) aquaculture, and some operators are today implementing systems to collect fish sludge in coastal aquaculture (fish pens in the sea), to avoid discharge into coastal waters. Fertilisers produced from fish sludge are already exported to countries outside the EU and EU recycling and fertiliser companies are interested.

Questions need to be addressed concerning fertilising products processed from fish sludge: hygiene and pathogen safety, heavy metals, contaminants, salinity, agronomic value. However, the Norway Food Safety Agency believes that resolving the regulatory obstacles should not wait until these are answered, whereas at present fish sludge is excluded from current studies on new FPR CMC materials

At present fish sludge is excluded from current studies on new EU FPR CMC materials (NMI study for DG GROW, see ESPP eNews n°86) because a question have been asked whether it is an animal by-product. However, the Norwegian Food Safety Agency believes it should be possible to move forward already today the study for FPR consideration. This to avoid having a lengthy process with first studies and discussion on hygiene, and then after that start studies related to the FPR. The Agency believes that these processes move at the same time..

ESPP comment: The ABP status and the definition of "fish sludge" both require clarification. Fish excreta are excluded from the definition of manure in 1069/2009 (art. 3.20 and art. 2.2-k) but not in 1774/2002 (Annex I Specific Definitions). Also, some stakeholders consider that fish sludge contains only fish excrement and uneaten fish food, whereas others suggest that it may contain some dead fish or parts thereof. Technologies are today available to separate dead fish from the residues sinking for fish pens (e.g. ESPP member Ragn-Sells).

Chiara Manoli, ILSA SpA (for EBIC and ECOFI), discussed the current exclusion of many different hydrolysed proteins from the EU Fertilising Products Regulation (FPR). "Hydrolysed proteins" as defined in the ABP regulations, covers a wide range of different amino acids, peptides and polypeptides, derived from different protein-containing ABP materials by widely varying hydrolysis processes. These processes are often company-specific and proprietary, using carefully defined and managed temperature, time, pH, pressure and other conditions to generate hydrolysates with specific and consistent performance characteristics.

Although tonnages of hydrolysed proteins used are relatively low, they are key elements in different organic fertilisers and biostimulants, so contributing to significant market value and agronomic impact. A 2022 survey of 48 companies involved in the European fertilising products industry revealed that around 350,000 metric tonnes are produced annually, half of which are sold in bulk formats.

The different hydrolysates, derived from different ABP proteins, are designed to deliver particular biostimulant properties, and/or nutrients in specific organic forms (especially nitrogen, but also phosphorus, potassium, magnesium, calcium). Hydrolysed proteins can be tailored for compatibility with plant root metabolism, soil properties and microbes or for slow release.

Different hydrolysed proteins are today widely authorised for use under national fertiliser regulations, often with a given hydrolysed protein currently authorised in several Member States. According to feedback from EBIC members in September, most hydrolysates are already placed in the market in 4-9 Members States, which could be upscaled if these products could access the Single Market.

Industry considers unclear the wording of the Delegated Regulation 2023/1605 concerning hydrolysed proteins derived from non-ruminant ABPs "*must be produced using a production process involving appropriate measures to minimize contaminations*" because it does not specify what criteria need to be met to achieve this requirement.

EBIC and ECOFI also requested:

- that **all hydrolysed protein end points under Reg. 142/2011 be explicitly recognised and included in CMC 10 of FPR**;
- guidance as to **how to request EFSA Opinions and prepare proposals for possible future EU ABP End-Points for other types of hydrolysed proteins** without submitting numerous dossiers for highly specific individual company materials (how to develop a group assessment and regulatory proposal process, whilst respecting company-confidential process and product data).

Jessica Fitch, ECOFI, submitted the example of guano (not presented in the webinar to save time). Guano is taken to mean aged, accumulated wild bird and bat excrements (not fish heads as the word was used in the past in Norway). Bat and seabird guano are today sustainably harvested, and provide a nature-sourced high nutrient, high micronutrient fertiliser, which delivers nutrients according to plant needs. Guano is processed in the country of origin: sun-drying, sifting, and removal of feathers and other foreign objects. At least sixteen EU Member States allow the use of guano in fertilising products and it has been safely

used for many years. It is authorised in Organic Farming (authorised under Annex II of Commission Implementing Regulation (EU) 2021/1165) and is valued as a nitrogen and phosphorus fertiliser.

EU imports of seabird guano range are c. 3000 - 8000 t/y, depending on climatic conditions and policies of exporting countries. Guano contains approximately 10-12 %N, 5 %P and 2 – 3% K. The ability to trade across EU borders is essential because large shipments are imported and the sold onwards to other companies that repackage the original delivery in big bags, often combining with other components to make a more complete final fertilising product.

At the EU level, however, although "guano of bats and birds" was specifically mentioned in art. 46 of the EU Fertilising Products Regulation (FPR), art. 3 of 1605/2023 refers only to bat guano (as in 142/2011). **ECOFI requests clarification of an ABP End-Point for seabird guano and of its inclusion into the EU FPR**.

Chris Thornton, ESPP, indicated other ABPs which have been flagged by industry stakeholders as currently excluded from the EU FPR despite authorisation and use in some Member States:

- **(some) Seafood processing wastes, fish bones ?**
- **(some) Dairy processing wastes ?**
- **Precipitated phosphates from biowaste or manure**
- **Pyrolysis products from biowaste or manure (depending on process)**

ESPP underlines that this is a preliminary list, based on input received, and that further analysis is needed to clarify more precisely which ABPs / processing methods are concerned, nutrient recycling potential (quantity and quality) and current regulatory status or questions under the ABP and FPR.

Several participants requested that **raw sheep's wool** be added to the above list for consideration.

Discussions and questions from the 'Chat'

A difficulty is the **lack of available market information, in most Member States**, on quantities and values of different types of organic fertiliser and biostimulant, and on ABP materials used as inputs for these. This could be partly addressed by better including organic fertiliser products and components (and more widely, secondary materials and the bioeconomy) into EU statistics systems, in particular: Eurostat, NACE codes, SAIO, EU fertilisers market data portal (see ESPP eNews n°79)

One company online indicates using around 10 000 tonnes of protein, feather meal and bone powder out of a total of 40 000 tonnes of organic and organo-mineral products manufactured and sold.

Questions were asked concerning the **legal status of algae and other biomass grown using ABPs as inputs**, for example algae grown in manure treatment ponds. This will be discussed at ESPP's workshop in Brussels & online, 13th November afternoon, with environment specialist lawyer Barry Love, the European Commission and algae innovation experts (see www.phosphorusplatform.eu/legalworkshop).

Concerns were voiced about the process for evaluating new materials and processes, as possible new CMCs or CMC modifications under the FPR. Innovation is currently rapid in organic fertilisers, biostimulants and nutrient recycling, so it is important that new proposals be taken into consideration, without waiting for conclusion of the current NMI study which only addresses materials submitted before June 2022.

ESPP – EBIC – ECOFI - Eurofema conclusions from the meeting

- **ABPs have been widely used for many years under national fertiliser regulations across Europe, showing safety and farmer satisfaction**. **They offer significant opportunities to further the nutrient circular Economy**. Industry operators do not understand why it is proving complex and slow to authorise them under the FPR.

- **The objective is open and constructive dialogue between concerned industries and regulators** (European Commission, Member States) with the aim of finding pragmatic and clear regulatory solutions for materials where a significant EU market potential, agronomic value and safety are demonstrated.

- **Specific cases which should be addressed rapidly include:**
  - aquaculture and fish sludge
  - alternative processing methods for composts and digestates (especially for biowastes, manure)
  - hydrolysed proteins
  - algae and biomass grown using ABPs (e.g. manure) as inputs

- guano
- raw wool

- Need for a permanently open and reactive process, engaging both DG SANTE and DG GROW, to **assess new proposals for ABP materials and processes, to respond to innovation** (where justified: demonstrated safety, EU market, agronomic value).

- Proposal to **reconsider the ABP Regulation architecture to reflect waste hierarchy, circular and bioeconomy objectives**, whilst continuing to ensure safety and downstream confidence.

- **How to take into account experience of safe use of an ABP material / process and existing authorisations in Member States, in EU Regulation and in a single EU market**, whilst maintaining both subsidiarity and national competence ? The single market is important not only for fertilising product manufacturers, but also very much for recycling process technology suppliers (difficult to sell a recycling process which produces a 'fertiliser' in one country but a 'waste' in another).

- **Importance of guidance to industry** on ABPs in the FPR and on related aspects of the ABP regulations, as well as coherent implementation between Member States.

Watch the webinar replay https://www.youtube.com/watch?v=91qEJWil2kU – slides https://drive.google.com/drive/folders/1fLmQa1y54y4TL7YRTiK61HFQ3gAH8dqp?usp=sharing

Livestock and nutrients

EU livestock environmental innovation platform launched

JRC platform aims to gather and analyse information on innovative industrial and environmental techniques that can drive decarbonisation, depollution, resource efficiency, and a circular economy in large agro-industrial plants covered by the Industrial Emissions Directive (IED 2010/75/EU). This Directive was amended in 2024 to now cover around three quarters of EU pig and poultry farms (280-380 LSU or more = Livestock Units) – see ESPP eNews n°89. The Platform will gather information on innovative techniques which have reached at least operational demonstration stage, input by stakeholders, and on EU funding schemes, and enable searches by sector or region. JRC will analyse input submitted before publishing, including comparison with BAT (Best Available Technology). The EU BAT BREF for "Intensive rearing of poultry or pigs" however dates from 2017(here). See also the very dynamic and up-to-date catalogue of environmental techniques for livestock maintained by the US dairy farmers' organisation NEWTRIENT https://www.newtrient.com/ for which technologies are independently assessed in operation on farms.

EU JRC INCITE Platform: https://innovation-centre-for-industrial-transformation.ec.europa.eu

*Europe's leading conference on recycling of manure and agricultural residues, **RAMIRAN**, will next take place in Wageningen, Netherlands, 15-17 October 2025 www.ramiran2025.nl*

Manure management technologies for sustainable dairy farming

Newtrient, in partnership with Dairy Management Inc. (DMI), has released a series of videos highlighting innovative manure management technologies implemented by dairy farms. These videos, part of Newtrient's 2020 Natural Resources Conservation Service (NRCS) Conservation Innovation Grant (CIG) project, showcase how advanced dairy systems are improving water quality and farm sustainability.
Fessenden Dairy in King Ferry, NY, manages manure from its 850-cow herd through a Bedding Recovery Unit and a composting system. The Unit produces dry manure solids for use as bedding, while liquids are stored for later application. Composting, an aerobic process requiring oxygen, moisture (60-65%), and proper carbon-nitrogen ratios, is completed in a rotary drum within 24 hours using high enough temperatures (50-65°C) for bacteria to work. This process creates pathogen-free compost, reducing environmental impact and nutrient runoff into local water systems. Fessenden's system supports cow health and farm sustainability, although it's not a simple plug-and-play solution and requires careful management.
Dairy Dreams, part of the Pagel Family Businesses, milks nearly 3 000 cows and uses a digester to produce methane and a nutrient recovery system to process manure. After methane extraction, solids are separated for cow bedding, and the remaining effluent undergoes ultrafiltration and reverse osmosis. This process yields a phosphorus-rich ultrafiltration concentrate, a nitrogen-rich reverse osmosis concentrate, and clean water. The system reduces environmental impact by decreasing the need for commercial fertilisers and cutting methane emissions, while also creating sustainable fertiliser products for the farm.

Royal Dairy in central Washington milks around 6 000 cows and uses a vermifiltration system to filter wastewater. This system, covering 3 hectares, relies on over 50 million earthworms and microbes to process roughly 1.5 million litres of water daily. The water, cleaned by the worms' digestive processes, is reused for irrigation and flushing, while the filtered solids go to composting. This method has significantly reduced contaminants, improved water quality, and enhanced soil health, with microbial populations increasing four to five times. The vermifiltration system also supports carbon capture, emission reduction, and creates valuable by-products like worm castings.

In-Vessel Composting https://www.youtube.com/watch?v=At5mwoIPSHI&t=1s

Ultrafiltration with Reverse Osmosis https://www.youtube.com/watch?v=WUGn6YlPNv4&t=3s

Vermifiltration https://www.youtube.com/watch?v=7muCXGorKhY

Newtrient is a company representing United States dairy producers. Newtrient online suppliers catalogue provides independent expert evaluations of technologies and suppliers, covering technical and economic aspects, after-sales service and farmers' operating experience (see SCOPE Newsletter n°125)

EU Fertilising Products Regulation (FPR)

European Court upholds FPR chromium limits (ferrous slags)

Ruling says European Commission was justified to set chromium (Cr_{total}) and vanadium and thallium limits on metal slags used under the EU Fertilising Products Regulation (FPR), to protect human health and the environment. Such slags can be used as liming products. All the arguments put forward by the German Iron slag Industry Federation, who brought the case, were rejected, and they are condemned to pay costs. The European General Court ruling underlines that this specification in the Commission's Delegated Regulation 2022/973 (By-Products, CMC11) was based on the scientific analysis of the JRC which concluded that long term repeated use of iron slags would lead to accumulation of chrome and vanadium in soils, susceptible to exceed soil quality standards and with possible toxicity impacts. The Court firmly concludes that environment and health protection are required for FPR criteria, rejecting the slag industry's claims that these should not be considered. The Court analyses in detail the question of chromium and vanadium, concluding that their potential toxicity justifies setting limits, that for chromium it is justified that these limits address total chromium (not only chromium VI), that criticisms of the PNEC limits for chromium and vanadium are not justified and that "given the important quantities of chromium and vanadium in ferrous slags" the Commission was right to take into account the possibility that these PNEC levels might be exceeded.

PNEC = Predicted No Effect Concentration

General Court judgment in Case T-560/22, total chromium in ferrous slags, Fachverband Eisenhüttenschlacken eV versus European Commission, 11th September 2024, available in German and in French HERE.

Fertiliser and mulch film polymer biodegradability

European Commission publishes study on assessment of biodegradability of polymers used in fertilisers and in mulch films. This accompanies the Delegated Regulations defining these criteria, which are pending publication. The biodegradation criteria proposed for polymers are based on 90% ultimate degradation / mineralisation measures as evolved CO2, in soil and in water, after 2 years for mulch films and after four years for polymers used as fertiliser coatings or for water retention. The study underlines the lack of available data, because polymers used today are mainly not biodegradable, variability of biodegradation depending on soil and climate conditions and the absence of available test methods for biodegradability in water over prolonged time. A number of studies suggest that much the biggest source of microplastics in agricultural soils is probably mulch films, and that these can reduce availability of phosphorus to crops: see ESPP eNews n°88.

Finalised Delegated Regulations (adopted by the European Commission 15th July 2024, following public consultation in March-April 2024 (see ESPP eNews n°85), pending publication https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13898-EU-fertilising-products-biodegradability-criteria-for-polymers-and-other-technical-amendments_en

"Study to assess biodegradability criteria for polymers used in EU fertilising products as coating agents or to increase the water retention capacity or wettability and of mulch films", Aimplas, published by the European Commission 2024, 254 pages https://dx.doi.org/10.2873/179169

Regulation on digital labelling of fertilisers published

Specifies additional information which can be provided by digital link on EU fertilising products, in addition to legally obligatory information physically on the label, and authorises digital-only labelling for bulk products. Additional information provided digitally can cover project composition and use. Different types of information can be accessible to different users (blenders, distributors, farmers, general public).

EU Regulation 2024/2516, amending the EU Fertilising Products Regulation 2019/1009, as regards the digital labelling of EU fertilising products, 18th September 2024 https://eur-lex.europa.eu/eli/reg/2024/2516/oj

One fifth of soil P deficits caused by global trade

Study shows that global trade is draining soil P from some world regions (in particular Africa, Russia, Oceania) to others. One fifth of global P consumption is estimated to be driven by non-food products (mainly fibre crops). General global trade expended 60x from 1970 to 2017, rising from 12% to 28% of GDP. Worldwide soil deficit increases grew from 2.7 to 6.9 MtP/y over this period, whereas soil P accumulation increased little (8.1 to 9.6 MtP/y). Thus, although soil P accumulation continues to annually exceed soil P depletion, regions losing soil P have seen this depletion accelerate (note: soil P accumulation or depletion does not relate directly to losses to water). 90% of soil P deficits are in developing or least developed regions. In 1970, trade only accounted for 0.2 MtP/y of P-deficits, but this increased to 1.3 MtP/y by 2017, that is nearly one fifth of global P deficits. Non-food products (mainly fibre crops, but also wood, leather …) accounted for around one fifth of global soil P-depletion, but over half of traded P-deficits (this compares to Hamilton et al. 2018 who concluded that non-food products accounted for over one third of P-losses and around half of traded P impacts).

"Impacts of global trade on cropland soil-phosphorus depletion and food security", K. Niu et al., Nature Sustainability,2024 DOI.

Research

JRC – Towards Sustainable Food Systems

Analysis of EU agri-food system impacts, trends and relevant policies concludes current impacts will not improve without policy changes, will be exacerbated by climate change. Systemic, less fragmented policies are needed: "*The current legislative context thus might not be suitable to counteract the global environmental crises. With no further actions, the EU food system will remain highly resource intensive, with the related consequences on the environment*". Inadequate monitoring of impacts and of policy effects, and incoherent uptake of initiatives across Europe are underlined. The absence of mandatory measures to reduce food waste is noted. The report recognises that phosphorus and nitrogen flows surpass planetary boundaries, and that supply is import dependent, compromising the environmental viability and resilience of the EU food system. The example of Denmark is given, where combined policies on N and P discharges successfully reduced N and P balances by over 50%, with actions including fertilisation accounting and quota systems, improved manure management, taxes on non-agricultural fertilisers and phosphorus in animal feed, agri-environment schemes and farm advisory services.

"Towards sustainable food systems: an analysis of EU policy measures setting environmental sustainability requirements. Current status and assessment of impacts", S. Mengual et al. European Commission Joint Research Centre 2024, 87 pages, DOI.

Soil phosphorus: research and policy needs

Review paper summarises data on phosphorus flows and stocks, both for fertilisation management and to support sustainability policies. Over 150 publications are cited. To sustainably manage P in soils, we need information on two critical aspects: the quantity of phosphorus in the soil and its availability to plants. In this article, authors summarize recent scientific studies with conceptual diagrams, reviewing both studies on the spatial distribution of phosphorus and its availability. They find that phosphorus fertiliser recommendations are often based on outdated concepts and could be improved with new measurement techniques. Additionally, current soil phosphorus maps underestimate the high local variability in phosphorus concentrations and should be improved by accounting for this uncertainty. Translating these findings into practice will require close collaboration between science, policy, and industry. Cheaper and more accurate measurement methods for soil P pools and fluxes need to be developed, and science and policymakers should work together on P-footprints for food products. Policies should incentivise P-efficient agricultural practices, including P-efficient crop breeds, and improve spatial planning of livestock production to reduce regional P misbalances.

"Understanding soil phosphorus cycling for sustainable development: A review", J. Helfenstein et al., One Earth, 2024 DOI.

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