

Joint Position of European Projects

On the need for an unambiguous definition by the European Commission regarding the waste/manure status of ammonium salts derived from off-gas cleaning associated to treatment of manure or manure-derived products

BACKGROUND

The EU has made huge progress in the implementation of circular economy solutions. With a new legal framework within the Circular Economy package (FPR, WFD, CAP-Farm to Fork) and a continued commitment to invest in research (H2020) and practical implementation (Interreg) the recovery and use of nutrients from wastes and residues is stimulated and facilitated.

The **EU is the front runner in technologies for recovery of nutrients from manure which will help close the nutrient cycle of agriculture**. This re-use of nutrients from manure has gained even more urgency, as outlined in recent communication of the Commission on Safeguarding food security and reinforcing the resilience of food systems[1].

The EU is also facing environmental challenges and combatting threats to water quality. The Nitrate Directive is targeting to reduce the contamination of our waters from the excess nitrates from agricultural sources. **The application of manure is limited as -due to its inherent nature- the timing of nitrogen mineralisation from manure cannot be completely aligned with the nitrogen uptake by plants, resulting in run-off and leaching.**

Manure treatment can be an effective way to combine the challenges of the circular economy, geographical independence of the EU while preserving our environment and waters. In the JRC-ReNure [2] research project it was investigated which manure-derived products can be safely used as equivalent to chemical derived fertilisers without posing a threat to water quality. Products adhering to **these ReNure criteria can be safely exempted from the restrictions on the soil application of manure in Nitrate Vulnerable zones (NVZ) as imposed in the Nitrate Directive and National Action Programmes.**

The EU is also taking care that animal by-products, including manure, can be used and recycled in such a way that **risks to public and animal health arising from those products are prevented and minimised**. If manure-derived products are treated in such a way that they do not pose any risk for the safety of the food and feed chain, an 'end point in the manufacturing chain' can be **declared**. The end point products from manure treatment can then be used as a fertiliser under the scope of the FPR and / or national fertiliser regulations. The end-point-products will then be outside the scope of the EG1069/2009 and can be handled without the restrictions and requirements that are imposed on handling, transport and use of animal by-products.

The actual implementation of all these efforts is however still hampered by some remaining issues that need to be solved.

POLICY ACTIONS FOR SOLVING REMAINING BARRIERS



1. Implementation of the ReNure criteria.

Manure-derived N-products that do not pose an increased risk for nitrate leaching or adverse environmental effects as compared to synthetic N fertilisers should be excluded from the 170 kg N ha⁻¹ limit that is posed on manure application following the Nitrate Directive.

The JRC-EC has evaluated a number of manure-derived products within the SAFEMANURE/ReNure research project [2]. Major outcome was that, following a set of criteria, certain manure-derived products can be safely used as replacement of chemically produced nitrogen fertilisers without increasing risk for nitrate leaching. As the technologies are developed, installations ready to produce, and farmers are in need of nitrogen fertilisers, and the EU needs to decrease the energy need for fertiliser production [1], the implementation of the ReNure criteria should not be delayed anymore.

2. Unambiguous definition of legal status of ammonium salts from off-gases

One of the recovered end products of manure treatment are ammonium salts (ammonium nitrate or ammonium sulphates). DG GROW and DG SANTE (Health and Food Safety) are implementing legislation with the aim to include these waste-recovered products as components for fertilisers.

However, some member states consider these products as animal by-products (ABP) in a very strict interpretation of the manure definition of the Nitrates Directive, restricting their recycling in the circular economy. **Unambiguous definition of the legal status of ammonium salts recovered from air purification of the off-gases generated by manure or manure treatment processes by the DGs of the EC and the member states of the EU is urgently needed.**

Ammonium salts from off-gases are high quality products which are now in the process of being qualified as a component material for the production of EU fertiliser under the regulation EU/2019/1009. This proposed CMC 15 RECOVERED HIGH PURITY MATERIALS includes:

“recovered high purity material, which is ammonium salt, sulphate salt, phosphate salt, elemental sulphur, calcium carbonate or calcium oxide, or mixtures thereof, of a purity of at least 95 % dry matter of the material. The high purity material shall be recovered from waste generated from: “...” (b) a gas purification or emission control process designed to remove nutrients from off-gases derived from one or more of the following input materials and facilities: “...” (viii) manure within the meaning of Article 3, point 20, of Regulation (EC) No 1069/2009 or derived products thereof; or (ix) livestock housing facilities.”

Following this wording, the **ammonium salts from off-gases of manure or manure-derived products are considered as a waste-derived product**. This was also explained by the JRC-report on the criteria for high purity materials recovered from waste (CMC 15):

“Off-gases of manure are not covered under the Regulation (EC) No 1069/2009 on animal by-products, and fall within the scope of this CMC WW/15.”

This is underlined by the Commission Expert group on Fertilising Products in their FAQ [4]:

“ 5.12 Are high purity materials out of off-gases generated by manure derived products within the scope of the Animal by-products Regulation?”

No. Off-gases from manure are not animal by-products or derived products within the scope of the Animal by-products Regulation, as defined in Article 2 of that Regulation. Therefore, the recovered high purity materials out of such off-gases are not within the scope of the said Regulation either and no end-point in the manufacturing chain has to be determined under the animal by-products rules for the use of such materials in EU fertilising products.”

This opinion of DG GROW is in line with the statement from DG SANTE [5]: *“question on nitrogen recovery from off-gases from manure treatment, manure storage, or livestock stables I confirm that off-gases from manure are not subject to Regulation (EU) No 1069/2009, since emissions are not within the scope of that Regulation.”*

However in practice, some member states consider the ammonium salts as waste-derived (in line with the logic of the FPR and the ABP-regulations, where the scrubbing salts are seen as waste product from purification of off-gases, and hence no End-point of manufacturing chain (EG 1069/2009 on animal by-products) should be declared).

Other member states make a distinction:

- Ammonium salts derived from scrubbing of air from stables are considered waste that are derogated to be used as a fertiliser. The ammonium off-gases in the stable air -emitted as a natural process- are considered to have **lost the direct physical and chemical link with the manure**.
- However, if the ammonium salts are derived from scrubbing of air that is originating from processing manure or derived products (controlled emission) they are considered to remain a manure product and hence an animal by-product. The argument that the ammonium off-gasses have lost the direct physical and chemical link to the manure treatment product that they originate from is not followed here.

The reason to consider the ammonium salts -recovered from the off-gases of manure and manure-derived products- as a manure is the definition of manure in the Nitrate Directive: *'livestock manure': means waste products excreted by livestock or a mixture of litter and waste products excreted by livestock, even in processed form*. However, the off-gases are not a processed form of manure, but an emission that has lost the physical link to the manure. **This interpretation of off-gases as processed manure and thus an ABP opposes the waste-derived status of the salts as outlined above and is not based on EU regulations on animal by-products or emissions and air quality.**

Furthermore, the **manure-ABP status does not contribute to the goals of the Nitrate Directive to protect water quality**: ammonium salts recovered from off-gases are defined as ReNure products and have been evaluated as equivalent to chemical fertilisers and safe to be exempted from the 170 kg N per hectare application limit under the Nitrate directive. In effect, the **ReNure status can be viewed upon as an 'end-of-manure' under the Nitrate Directive**. Therefore, it would seem unnecessary to confer the status of manure or animal by-product to the ammonium salts.

The manure/ABP status limits market uptake as it poses a **complex set of prerequisites on transport, handling and storage of the products (laid down in EC 1069/2009 and 142/2011) and requires registration, approval, control and certification of all facilities, vehicles and actors along the market chain. This forms a logistical and administrative burden that further complicated and hinders the market entry and acceptance of the products.** The different interpretation between member states also **causes an unfair level playing field for producers in the different countries.**

This difference in interpretation of the legal status of the product has consequences that will not be solved by the implementation of the ReNure criteria or inclusion in FPR CMC 15!

Harmonizing the views regarding the status of ammonium-salts originating from off-gas cleaning between the various branches of the European Commission (DG GROW, DG SANTE, DG ENV, DG AGRI) is a prerequisite for such circular economy processes and associated products to enter the market as sustainable, renewable alternatives to synthetic nitrogen fertilizers which are produced from conventional chemical processes using fossil resources (natural gas).

In concreto, the views expressed in the various documents and communications by DG GROW [4] and DG SANTE [5] are supportive of this transition, whereas ambiguous interpretation towards the remaining status as 'manure' for such products *vis-à-vis* the Nitrates Directive in other proclaimed positions by the European Commission may hinder or delay the transition towards more circularity in mineral nitrogen flows in European agriculture.

DG ENV needs to make a clear statement aligning with DG GROW and DG SANTE that the ammonium salts derived from off-gases of manure or manure treatment processes are not animal by-products and are not considered as manure under the Nitrate Directive.

This joint position is undersigned by the following European research and innovation projects.

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References

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- [2] Huygens, D., Orveillon, G., Lugato, E., Tavazzi, S., Comero, S., Jones, A., Gawlik, B. and Saveyn, H., Technical proposals for the safe use of processed manure above the threshold established for Nitrate Vulnerable Zones by the Nitrates Directive (91/676/EEC), EUR 30363 EN, Publications Office of the European Union, Luxembourg, 2020, ISBN 978-92-76-21539-4 (online),978-92-76-21540-0 (print), doi:10.2760/373351 (online),10.2760/984729 (print), JRC121636.
- [3] Huygens D & Saveyn HGM. Technical proposals for by-products and high purity materials as component materials for EU Fertilising Products, EUR 31035 EN, Publications Office of the European Union, Luxembourg, 2022, ISBN 978-92-76-50116-9, doi:10.2760/185544, JRC128459.8.2 (pag 38, 41).
- [4] Note to the Commission expert group on Fertilising Products on the frequently asked questions in the implementation of the Fertilising Products Regulation. Meeting of 4-5 April 2022. Item 3.5 on the Agenda/21.03.2022
- [5] European Commission DG for health and Food Safety Letter to Csstrs concerning safe recycling of nutrients in Animal By Products (ABPs) and manures Ref. Ares(2022)4033785 - 31/05/2022. Response to question raised by the ESPP on 25th of April 2022 to Stella Kyriakides, European Commissioner for Health and Food Safety and: Thierry Breton, European Commissioner for Internal Market