Fertilisers Efficiency Enhancers

POSITION PAPER

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Urease and Nitrification Inhibitor technologies contribute to the European Green Deal

Fertilisers Efficiency Enhancers, a CEFIC Sector Group, is ready to contribute to achieving the ambitions of the European Green Deal and the Common Agricultural Policy (CAP) national strategic plans to reflect the European Union climate neutrality goals. Ensuring these strategic plans are assessed according to robust climate and environmental criteria will support the deep transformation of the European Model of Agriculture.

Fertilisers Efficiency Enhancers is well positioned to offer innovative solutions addressing the challenges highlighted in initiatives such as the Farm to Fork and Biodiversity strategies, which outline roadmaps for the transition towards a sustainable food system, a healthy living environment and the protection of healthy ecosystems. By increasing nitrogen use efficiency, our technologies - Urease Inhibitors (UIs) and Nitrification Inhibitors (NIs) - play an important role in achieving these goals.

Moreover, with a raising demand for food and a reduction of arable land per capita, it is a challenge for farmers to boost yields.

UIs and NIs benefit both the environment and farmers by offering valuable solutions for sustainable and effective nutrient management by significantly reducing GHG and ammonia emissions, and nitrate leaching from nitrogen fertilisation.

UIs are a proven technology applied to urea for over 25 years in more than 130 countries[1]. For their contribution to meeting ammonia (NH_3) reduction targets[2], UIs are considered mandatory or best practice recommendations in countries including Germany[3], Denmark[4], France[5], Poland[6] and Ireland[7]. UIs help reduce eutrophication, acidification and small particle dust caused by ammonia emissions from urea, which help preserve biodiversity and reduce air quality impairment. Moreover, recent research shows a reduction of direct nitrous oxide (N_2O) emissions by UI[8].

[1] Although in several EU countries these technologies are supported in the framework of national legislation and/voluntary initiatives, UI and NI use in Europe is still limited compared to other parts of the world, such as in the US. More details are available in the attached annex.

[2] UI also contribute to the achievement of the National Emission Ceiling Directive targets, including ammonia emissions: https://iopscience.iop.org/article/10.1088/1748-9326/ac16fe/pdf

[3] https://www.gesetze-im-internet.de/d_v_2017/D%C3%BCV.pdf

[4] https://www.retsinformation.dk/eli/lta/2019/760

[5] France has listed NIs among the agricultural practices which are eligible for the Label Bas-Carbone/Méthode Grandes Cultures to reduce the carbon footprint of agriculture: https://www.ecologie.gouv.fr/sites/default/files/M%C3%A9thode%20LBC%20Grandes%20cultures.pdf)

[6] https://www.cdr.gov.pl/aktualnosci-instytucje/3678-od-1-sierpnia-2021-r-nie-bedzie-mozna-stosowac-mocznika-w-formie-granulowanej#:~:text=2021%20Ods%C5%82ony%3A%207819-,Od%201%20sierpnia%202021%20r.,dnia%201%20sierpnia%202021%20r

[7] https://www.teagasc.ie/media/website/publications/2020/NH3-Ammonia-MACC.pdf

[8] https://www.sciencedirect.com/science/article/pii/S0160412019324353

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NIs applicable to all urea and ammonium containing fertilisers increase Nitrogen Use Efficiency (NUE)[9] by decreasing nitrogen losses from mineral and organic fertilisers and therefore contributing to reducing their use. The application of NIs reduces nitrous oxide emissions and nitrate (NO_3) leaching which results in better water quality and less eutrophication[10].

Both UIs and NIs mitigate nitrogen (N) losses whether from gaseous emissions (NH_3 and N_2O) or nitrate leaching. While improving NUE, crop yields can either be improved or current yield levels are achieved with less nitrogen fertiliser. A higher NUE means less nitrogen is required for food production which supports the overall Farm to Fork objective of tackling excess nutrients in the environment[11]. Since revenues from higher yields typically outperform costs of inhibitor technology, the improvement of NUE contributes to a higher return on investment for farmers and a lower carbon footprint of crop and food production at once.

Fertilisers Efficiency Enhancers is ready to help European farmers grasp the opportunities arising from the transition to a climate-neutral agriculture, and to contribute to the development of a policy framework to meet EU's ambitious climate and environmental targets.

Clear legislative measures and farmers' access to science-based information on the environmental benefits of UIs and NIs should be coupled with free and open access to flexible solutions to meet farmer and consumer needs. While we do not believe a mandate to be the most effective solution to promote wider use of EU registered UIs and NIs, we recognise the urgency by which the European Green Deal wishes to drive progress and we are confident that a wider endorsement and adoption of UIs and NIs use (i.e. as an eco-scheme option under the new CAP) would create significant added value in line with the EU climate and environmental ambitions[12].

For more information about NI and UI please see the annexed document.

About Fertilisers Efficiency Enhancers:
Fertilisers Efficiency Enhancers is a Sector Group of Cefic, the European Chemical Industry Council. We represent the value chain of nitrogen stabilisers and other fertiliser enhancers in Europe and promote the agronomic and environmental benefits of nutrient enhancers in fertiliser applications.

Membership: BASF, InVivo Bioline, Compo Expert GmbH, EuroChem Group AG, Koch Agronomic Services and Solvay.

[9] The amount of applied nitrogen that is absorbed and used by the plant.
[10] NI are recognized both as a nitrogen mitigation technology and as a technological GHG emission mitigation option in the JRC Technical Report "Modelling environmental and climate ambition in the agricultural sector with the CAPRI model".
[11] "The Commission will act to reduce nutrient losses by at least 50%, while ensuring that there is no deterioration in soil fertility.
This will reduce the use of fertilisers by at least 20% by 2030"
(https://ec.europa.eu/food/sites/food/files/safety/docs/f2f_action-plan_2020_strategy-info_en.pdf).
[12] The Court of Auditors Special Report 16/2021 "Common Agricultural Policy and Climate" highlights the need for the CAP to support practices such as the use of NI in other to achieve climate mitigation targets.