

NUTRIent MANagement and Nutrient Recovery Thematic Network(NUTRIMAN)

At-a-glance

Objective: Improve the exploitation of the novel N/P nutrient management/recovery potential for the ready-for-practice cases, which are still not sufficiently known by practitioners and market players.

Lead countries/organization(s): 3R-BioPhosphate Ltd.(HU); funded by EU

Place: Hungary, Belgium, Spain, Netherlands, France, Germany, Italy, Poland

Background and Objectives

Agriculture and food industry have a high dependence on resources in their production and strive for long-term sustainability. There is an urgent need to optimize resource use and smooth the transition to a knowledge-driven agriculture. Therefore, it is essential to spread knowledge and information about the insufficiently exploited N/P recovery innovations (technologies, products, practices) that are already commercially and market “ready for practice” to agricultural practitioners.

The objective of NUTRIMAN is to improve the exploitation of these commercially and market ready-for-practice cases of N/P nutrient management/recovery potential that are not yet sufficiently known by practitioners. The action will create new opportunities for farmers to develop connections between matured research results with market competitive and commercially useful results, and farming practice in the priority area of nutrient management and nutrient recovery. NUTRIMAN takes a bottom-up approach to identify incentives and bottlenecks for adoption and to prioritise technologies/products that will ensure greater willingness to utilise innovations and improve multiplier effects. The project targets large scale uptake of the recovered N/P innovative fertilisers, produced from unexploited resources of organic or secondary raw materials in line with the circular economy model, that are efficiently used by farmers from both economic and environmental standpoints.

Actions

IDENTIFICATION of matured innovative research results in the field of N/P recovery EU28 technologies & products, which are near to be put into practice, but not sufficiently known by agricultural practitioners.

EVALUATION of innovative N/P nutrient recovery technologies & novel N/P fertiliser products and practices, both by experts and by the potential end-users.

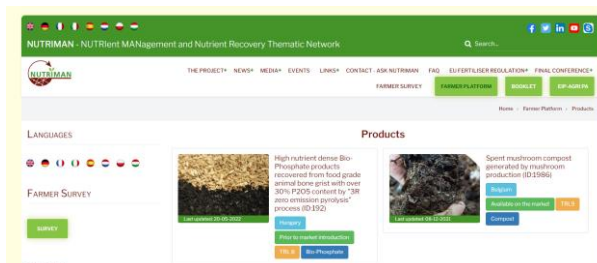
COMPILATION of “ready for practice” knowledge in a form of European Innovation Partnership Agricultural Productivity and Sustainability (EIP-AGRI) practice abstracts, info sheets, multi-lingual (8 languages) product application and training materials, audio-visual materials and infographics.

SHARING & SPREADING the collected knowledge towards agricultural practitioners (farmers, farmer organisations, advisory services) during online webinar and face-to-face workshops across Europe.

LONG TERM OPERATION (up to year 2031) of 8 languages interactive practice oriented NUTRIMAN farmer platform.

Results

NUTRIMAN web Farmer Platform has created an inventory of 80 innovative fertiliser processing technologies and recovered phosphorus/nitrogen products. 150 field test showcases and workshops have been organised across EU to demonstrate novel applications to farmers and other practitioners. More than 50 articles in journals, newspapers, farmer magazines, newsletters have been published.



NUTRIMAN Farmer Platform

Result continued

- **Social:** Networks like NUTRIMAN have been shown as crucial elements in awareness-raising in European dimension, engaging different actors in the biobased fertilisers value chains (from scientists to farmers) to connect and develop together. NUTRIMAN achieved greater user acceptance of collected solutions and a more intensive dissemination of existing knowledge. The project also serves educational and training purposes.
- **Environmental:** The project supports the implementation of 2030 EU targets for Circular Economy, Green Deal, environmental and climate sustainability, while improving food safety and security. It provides tools to the European agricultural sector to become more productive, managing natural resources sustainably/preserving the environment. It provides different solutions for bio-based wastes to be upcycled into different fertilising products.
- **Economic:** NUTRIMAN Farmer Platform is supporting farmers with economically sustainable innovative solutions to improve farm practices where the environmental sustainability can work hand in hand with market competitive economical sustainability. It also supports a more rapid economical recovery and the creation of new jobs.



BioPhosphate product



Successes and Lessons Learned

"We need more trust and knowledge across the entire value chain. Farmers should understand the real benefits of bio-based fertilisers and how to practically use them in their farming processes," says Edward Someus, Recycling and Upcycling engineer at 3R-BioPhosphate Ltd. So far, basic research programmes have failed to truly grab farmers' attention. Farmers are more interested in innovations that are 'ready for practice' and already proven and demonstrated under real field conditions with market competitive performance.

"Our platform lists and presents 'ready for use' and 'close to market' novel recovery technologies and products focusing on the most urgent needs of farmers. The database is continuously expanded and will continue to be until 2031," Someus explains. "It presents all innovative solutions with a status just before they are introduced to the market or slightly after."

NUTRIMAN has already contributed to a large-scale take-up of innovative, recovered nitrogen and phosphorus fertilisers. These include, for instance, a zero-emission pyrolysis technology enabling phosphorus recovery from food grade animal bone grist at industrial scale. On the nitrogen front, another example is the Poul-AR® technology which enables the production of ammonia sulfate/nitrate from poultry manure.