

Nutrient Management and Nutrient Recovery Thematic Network

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NUTRIMAN in Brief





- Title: Nutrient Management and Nutrient Recovery Thematic Network (NUTRIMAN) from year 2018 to 2031
- Programme: H2020, RUR 15, Thematic networks compiling knowledge ready for practice.
- Coordinator: Edward Someus, 3R-BioPhosphate Ltd.
- Start of the project: 1 October 2018, Duration: 36 months + 10 years
- Int. conference: September 16, 2021 https://nutriman.net/conference
- Funded by: European Union Horizon 2020, RUR-15-2018 (CSA Coordination and Support Action), grant agreement no. 818470.
- Official website: https://www.nutriman.net



The NUTRIMAN Consortium



Total: 18 Partners from **8 EU** countries 2018-2021:

- 9 Research Institutes
- **3** SMEs
- Chambers of Agri, Farmers' association,
- Non-profit organisation.

















The NUTRIMAN project



What is NUTRIMAN?

- A Nitrogen and Phosphorus thematic network compiling and sharing knowledge of "ready-for-practice" recovered bio-based fertiliser technologies, products, applications and practices for the benefit of agricultural practitioners. Solutions above TRL6 maturity level.
- Areas of interest: Nitrogen and Phosphorus nutrient recovery, novel technologies and innovative fertilizers, food safety and supply security, sustainable food production.

Reasons:

• Ensures that when the new EU Fertilising Products Regulation law harmonization is reaching implementation status in 2022, the agricultural practitioners already know, have tried and are applying such recovered products in practice.

For whom: Farmers, advisors, businesses, applied researchers, NGOs, etc.

Bottom-up approach = the farmers' point of view

TRL Technology Readiness Level IRL Investment Readiness Level



Operational area: beyond successfully completed TRL6.				
	TRL & IRL EVOLUTION schedules and capabilities Status of RTD progress - "RMI" Research Maturity Index		entation risk	Evidence
Maturity progress	TRL 1-3 = IDEA = basic principles, concept	0-1%	100%	THESIS: theoretical assumptions
	TRL 4 = validated in laboratory	<3%	>97 %	
	TRL 5-6 = PILOT validated Low RMI	<25%	>90%	
	IRL5-6 = validate market fit RTD risk break-even point			
	TRL 7= PROTOTYPE demo	60-75%	40-70%	Prototype Demo
	IRL 7 = prototype viable product	00-7378		
	TRL8 = FIELD DEMO qualified	75-90%	15-25%	Industrial validated
	IRL 8 = validate value delivery	73-30 /6		
			1-5%	Market validated for commercial replication
	environment, ready for market competitive	95-99%		
	commercial deployment.			
	IRL 9 = identify and validate metrics first full industrial/market/commercial replication model.			

The NUTRIMAN project



How?

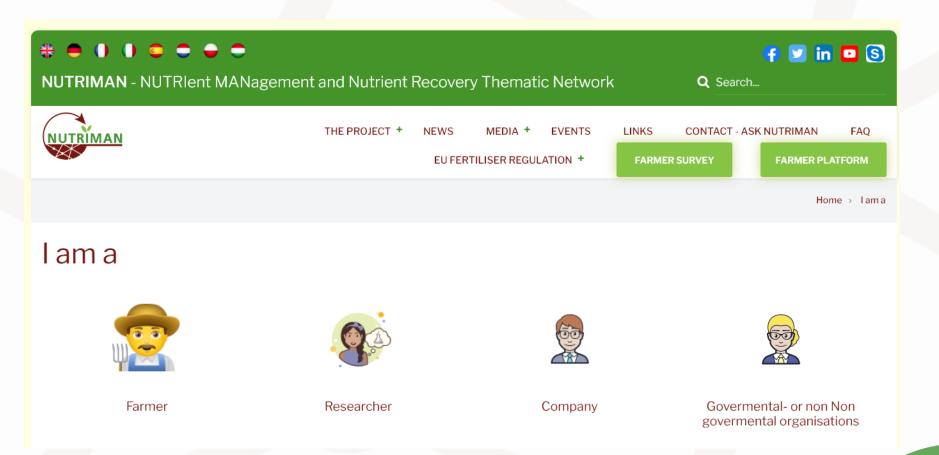
- Focuses on connecting market competitive and commercially "ready for practice" innovative results drawn from high research maturity applied scientific programmes and common industrial practices.
- Brings together innovation actors (farmers, advisors, developers, businesses, NGOs, etc.) and helps to build bridges between user-oriented applied research results and agricultural production practices.
- How to connect to NUTRIMAN network: https://nutriman.net/i-am-a - ASK NUTRIMAN
- Mini survey feed back to be replied in 8 languages (takes 1 minute only): Example:
- https://nutriman.net/farmerplatform/product/id_192#mini-survey



https://nutriman.net/i-am-a



By selecting your end-user page you can easily acess to the **SPECIFIC INFORMATION.**





The NUTRIMAN project – key activities



- 1. **IDENTIFICATION** of matured innovative research results in the field of N/P recovery EU28 technologies, which are near to be put into practice, but not sufficiently known by agricultural practitioners.
- 2. **EVALUATION** of innovative N/P nutrient recovery technologies & novel N/P fertiliser products and practices, both by experts and by the potential end-users.
- 3. COMPILATION of "ready for practice" knowledge in a form of EIP-AGRI practice abstracts, info sheets, multi-lingual (8 languages) product application and training materials, audio-visual materials and infographics.
- **4. SHARING & SPREADING** the collected knowledge towards agricultural practitioners(farmers, farmer organisations, advisory services) during online webinar and face-to-face workshops across Europe.
- 5. LONG TERM OPERATION (up to year 2031) of 8 languages interactive practice oriented NUTRIMAN farmer platform: https://nutriman.net/farmer-platform



Objective of NUTRIMAN





Technologies and products

For the recovery of N/P

"ready to be put on

the market"



NUTRIMAN Platform for Farmers
Advice & Recommendations





NUTRIMAN Platform for

Farmers

Practical Knowledge

https://nutriman.net/farmer-platform



How to contact with the NUTRIMAN - ASK NUTRIMAN



- NUTRIMAN Social pages: Facebook/Twitter/LinkedIn:
 @Nutrimannetwork
- Online contact form at 8 lanuages: https://nutriman.net/contact
 - general questions on the NUTRIMAN Thematic Network
 - specific questions related to any technology and/or product published on the Farmer Platform.
 - Sharing your innovative nitrogen/phosphorus recovery technology with the farmers.
- The most interesting interactions will be highlighted anonymously in the NUTRIMAN FAQ sections operating at 8 languages: https://nutriman.net/FAQS



NUTRIMAN – Farmer Platform



- Specifically developed website for farmers.
- Key information at eight languages (EN, DE, FR, IT, NL, ES, PL, HU)
- Online Database of innovative N/P nutrient recovery technologies & novel N/P fertiliser products and practices:
 - EIP-AGRI practice abstracts,
 - info sheets,
 - product application and training materials,
 - audio-visual materials and
 - Infographics.
- https://nutriman.net/farmer-platform





Characteristics of the NUTRIMAN web platform

Dedicated pages:

- Description of the main characteristics of the product or technology
- Guidelines for appropriate involvement in agriculture

Are available:

- Fact sheet;
- Infographics;
- Audio-visual equipment

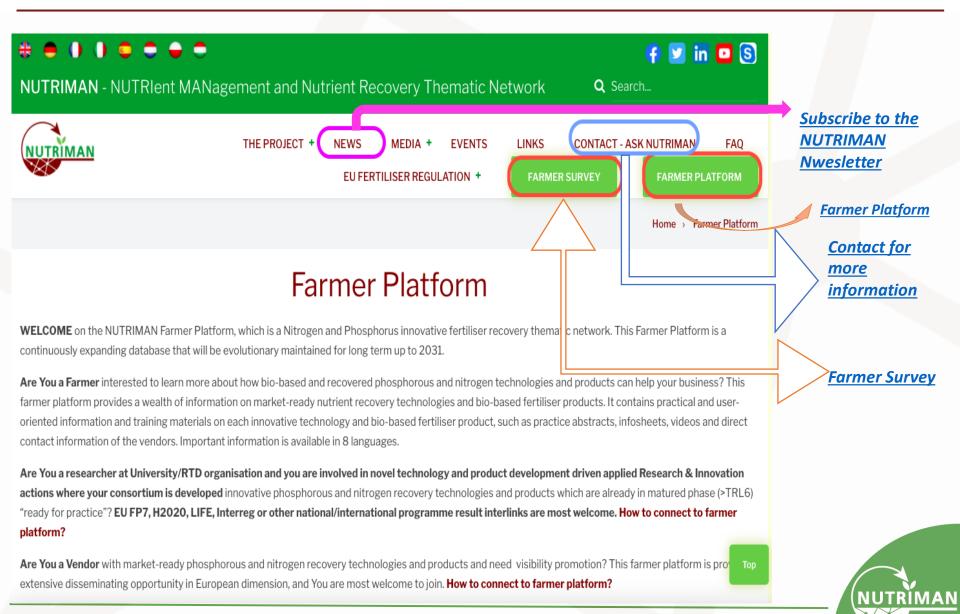
Joint work of the partner of the project and companies involved

Link to the platform for farmers in **own language**



Characteristic of NUTRIMAN Platform





Characteristics of the NUTRIMAN web platform



The production <u>technology</u> on the platform have been divided into categories:

- Biological Nutrient recovery: Composting, anaerobic digestion, microalgae technology;
- Phosphorus precipitation from liquid manure, waste water and drain water;
- Thermochemical Nutrient Recovery;
- 4. Physic-chemical nitrogen recovery from manure, digestate and wastewater: separation, stripping and membrane processes.

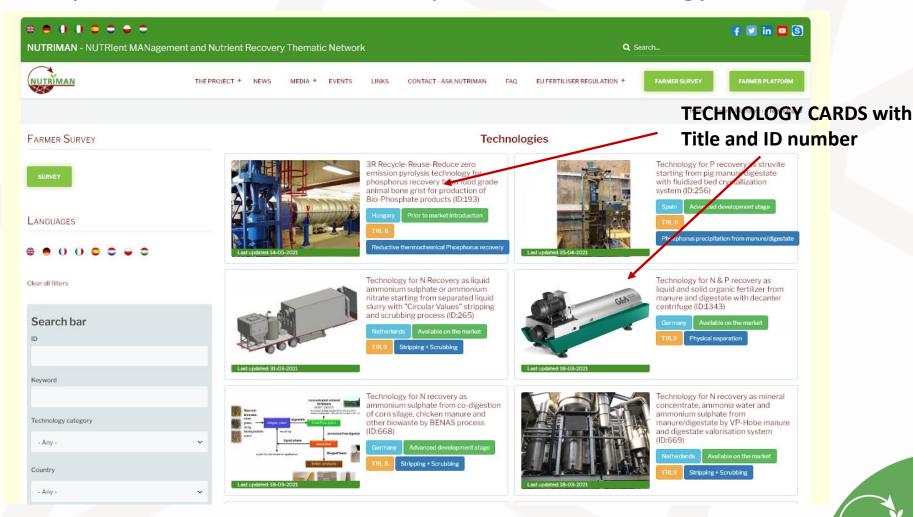
The platform contains the direct contacts:

- > fertilizer manufactures
- > the developers of each of the technologies



NUTRIMAN Farmer Platform – Technology cards

https://nutriman.net/farmer-platform/technology





Characteristics of the NUTRIMAN web platform



The <u>products</u> present on the platform have been divided by category:

- Compost and digestate (and Biomass);
- 2. Ash;
- Struvite and other P-Products;
- 4. Pyrolysis materials: Biochar and Bio-Phosphate;
- 5. Scrubber water and mineral Nitrogen Concentrate

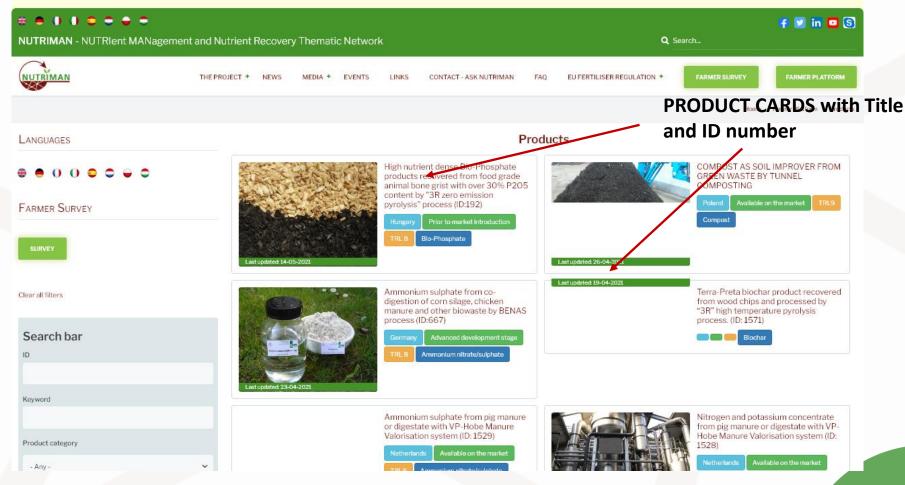
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NUTRIMAN Farmer Platform – Product cards

https://nutriman.net/farmer-platform/product



NUTRIMAN Farmer Survery

Farmers, Users and interested stakeholders kindly asked to return Product and/or Technology Mini Surveys. Thank you.

- 8 languages can be selected and takes 1 minute to return only. Receiving feed backs from farmers is important.
- Any technology / product can be mini survey evaluated and responded, just pls select ID. Example:
- https://nutriman.net/farmerplatform/product/id_192#mini-survey
- NUTRIMAN international conference: September 16, 2021
- https://nutriman.net/conference
- NUTRIMAN biochar conference: September 17, 2021
- https://nutriman.net/conference





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www.nutriman.net







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