



Nutrient Management and Nutrient Recovery Thematic Network

Presentation of the NUTRIMAN
FARMER PLATFORM

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- **Specifically developed website for farmers.**
- Key information in 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



NUTRIMAN - NUTRIent MANagement and Nutrient Recovery Thematic Network

THE PROJECT + **NEWS** MEDIA + EVENTS LINKS **CONTACT - ASK NUTRIMAN** FAQ

EU FERTILISER REGULATION + **FARMER SURVEY** **FARMER PLATFORM**

Home > Farmer Platform

Farmer Platform

WELCOME on the NUTRIMAN Farmer Platform, which is a Nitrogen and Phosphorus innovative fertiliser recovery thematic network. This Farmer Platform is a continuously expanding database that will be evolutionary maintained for long term up to 2031.

Are You a Farmer interested to learn more about how bio-based and recovered phosphorous and nitrogen technologies and products can help your business? This farmer platform provides a wealth of information on market-ready nutrient recovery technologies and bio-based fertiliser products. It contains practical and user-oriented information and training materials on each innovative technology and bio-based fertiliser product, such as practice abstracts, infosheets, videos and direct contact information of the vendors. Important information is available in 8 languages.

Are You a researcher at University/RTD organisation and you are involved in novel technology and product development driven applied Research & Innovation actions where your consortium is developed innovative phosphorous and nitrogen recovery technologies and products which are already in matured phase (>TRL6) "ready for practice"? **EU FP7, H2020, LIFE, Interreg or other national/international programme result interlinks are most welcome. How to connect to farmer platform?**

Are You a Vendor with market-ready phosphorous and nitrogen recovery technologies and products and need visibility promotion? This farmer platform is providing extensive disseminating opportunity in European dimension, and You are most welcome to join. **How to connect to farmer platform?**

[Subscribe to the NUTRIMAN Newsletter](#)

[Farmer Platform](#)

[Contact for more information](#)

[Farmer Survey](#)

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Criteria for admission to the NUTRIMAN PLATFORM

The **products** and **technologies** on the platform have successfully passed an **admission phase** based on the **following criteria**:

1. **INPUT material**: waste, rejection.
2. **OUTPUT material**: recovery fertilizer containing N, P.
3. Advanced technological maturity level: **TRL > 6**.

Characteristics of the NUTRIMAN web platform



The production [technology](#) on the platform have been divided into categories:

1. Biological Nutrient recovery: Composting, anaerobic digestion, microalgae technology;
2. Phosphorus precipitation from liquid manure, waste water and drain water;
3. 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>

NUTRIMAN - NUTRIent MAnagement and Nutrient Recovery Thematic Network

THE PROJECT * NEWS MEDIA * EVENTS LINKS CONTACT - ASK NUTRIMAN FAQ EU FERTILISER REGULATION * FARMER SURVEY FARMER PLATFORM

FARMER SURVEY

SURVEY

LANGUAGES

Clear all filters

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ID

Keyword

Technology category

Country

Technologies

3R Recycle-Reuse-Reduce zero-emission pyrolysis technology for phosphorus recovery from food grade animal bone grist for production of Bio-Phosphate products (ID:193)

Hungary Prior to market introduction

TIL 6

Reductive thermochemical Phosphorus recovery

Last updated 14-05-2021

Technology for P recovery as struvite starting from pig manure/digestate with fluidized bed crystallization system (ID:256)

Spain Advanced development stage

TIL 6

Phosphorus precipitation from manure/digestate

Last updated 10-04-2021

Technology for N Recovery as liquid ammonium sulphate or ammonium nitrate starting from separated liquid slurry with "Circular Values" stripping and scrubbing process (ID:265)

Netherlands Available on the market

TIL 3

Stripping + Scrubbing

Last updated 10-03-2021

Technology for N & P recovery as liquid and solid organic fertilizer from manure and digestate with decanter centrifuge (ID:1343)

Germany Available on the market

TIL 3

Physical separation

Last updated 05-09-2021

Technology for N recovery as ammonium sulphate from co-digestion of corn silage, chicken manure and other biowaste by BENAS process (ID:668)

Germany Advanced development stage

TIL 6

Stripping + Scrubbing

Last updated 18-03-2021

Technology for N recovery as mineral concentrate, ammonia water and ammonium sulphate from manure/digestate by VP-Hobe manure and digestate valorisation system (ID:669)

Netherlands Available on the market

TIL 3

Stripping + Scrubbing

Last updated 05-03-2021

TECHNOLOGY CARDS with Title and ID number

Characteristics of the NUTRIMAN web platform



The [products](#) present on the platform have been divided by category:

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

Direct contact are available:

- fertilizer manufactures
- the developers of each of the products



NUTRIMAN Farmer Platform – Product cards

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

PRODUCT CARDS with Title and ID number

Products

High nutrient dense Bio-Phosphate products recovered from food grade animal bone grist with over 30% P2O5 content by "3R zero emission pyrolysis" process (ID:192)

Hungary | Prior to market introduction

TRL 8 | Bio-Phosphate

Last updated: 14-05-2021

COMPOST AS SOIL IMPROVER FROM GREEN WASTE BY TUNNEL COMPOSTING

Poland | Available on the market | TRL 9

Compost

Last updated: 26-04-2021

Ammonium sulphate from co-digestion of corn silage, chicken manure and other biowaste by BENAS process (ID:667)

Germany | Advanced development stage

TRL 8 | Ammonium nitrate/sulphate

Last updated: 23-04-2021

Terra-Preta biochar product recovered from wood chips and processed by "3R" high temperature pyrolysis process. (ID: 1571)

Biochar

Ammonium sulphate from pig manure or digestate with VP-Hobe Manure Valorisation system (ID: 1529)

Netherlands | Available on the market

TRL 8 | Ammonium nitrate/sulphate

Nitrogen and potassium concentrate from pig manure or digestate with VP-Hobe Manure Valorisation system (ID: 1528)

Netherlands | Available on the market

Search bar

ID

Keyword

Product category

- Any -

Criteria for selection of P/T to the NUTRIMAN PLATFORM

Criteria for revision of longlist	
Technologies	Products
<p>1. Technology maturity and readiness level from successfully completed TRL\geq6.</p> <ul style="list-style-type: none"> • Applicable at farm level • Preferably demonstrated in agricultural practice. • If not, product can still be good, but choice of technology and production by another producer not by the farmer 	<p>1. Nutrient quality/efficiency, demonstrated in agricultural practice (proof of fertilizing value for agriculture)</p> <ul style="list-style-type: none"> • Effectiveness in fields • Fertilizer replacement value • Recommended by third parties (eg. Chamber of Agriculture) • Known and homogeneous nutrient (macro-, micro-, trace-elements) content and concentration • Based of harmonized or otherwise accepted research/analytical standards
<p>2. Processing conditions proven effectiveness to convert crude input material into safe and high quality fertilizing products.</p> <ul style="list-style-type: none"> • Based on input material risk assessment of: <ul style="list-style-type: none"> ◦ bio-hazards, pathogens ◦ heavy metals, pollutants ◦ contaminants, foreign substances ◦ environmental/climate pollution ◦ social acceptance • Important to determine applicable production and process legislation requirements • Capacity to handle sufficient input volumes 	<p>2. Input material</p> <ul style="list-style-type: none"> • Origin of raw material must be known to perform input material risk assessment of: <ul style="list-style-type: none"> ◦ bio-hazards, pathogens ◦ PTEs, pollutants ◦ contaminants, foreign substances ◦ environmental pollution ◦ climate impacts ◦ social and market acceptance • Important to determine applicable product and application legislation • Availability in region and fertilization period
<p>3. CAPEX and OPEX: production costs euro/ton</p> <ul style="list-style-type: none"> • On commercial scale • Use of energy and other resources • Labour requirements • Production costs compared with alternative costs for disposal 	<p>3. Product price EXW wholesale: euro/kg N; euro/kg P₂O₅</p> <ul style="list-style-type: none"> • Fertilizer replacement value • The lower the nutrient density the lower the price • Total costs including transport, storage and application

Criteria for selection of P/T to the NUTRIMAN PLATFORM

Criteria for revision of longlist	
Technologies	Products
<p>3. CAPEX and OPEX: production costs euro/ton</p> <ul style="list-style-type: none"> • On commercial scale • Use of energy and other resources • Labour requirements • Production costs compared with alternative costs for disposal 	<p>3. Product price EXW wholesale: euro/kg N; euro/kg P₂O₅</p> <ul style="list-style-type: none"> • Fertilizer replacement value • The lower the nutrient density the lower the price • Total costs including transport, storage and application
<p>4. Legal status (regional/MS national/EU)</p> <ul style="list-style-type: none"> • MS Authority permit available • Regional permit requirements from local authorities • In conformity with process requirements in: <ul style="list-style-type: none"> ○ All relevant industrial, environmental, climate and safety norms and EU harmonized MS regulations ○ Animal Byproduct Regulation (EC/1069/2009) ○ New Circular Economy and New Green Deal • Best available technique listing status 	<p>4. Legal status (MS national/EU)</p> <ul style="list-style-type: none"> • Product definition/classification according to: <ul style="list-style-type: none"> ○ Animal Byproduct Regulation (EC/1069/2009) ○ Fertilising Product Regulation (EU/1009/2019) ○ Nitrates Directive (91/676/EEC) ○ Waste Directive (2008/98/EC) • Regulation and application limits • Allowed for certified organic farming yes/no • Product environmental performance (N leaching, emissions, GHG emissions, heavy metals, other contaminants)

Criteria for selection of P/T to the NUTRIMAN PLATFORM

Criteria for revision of longlist	
Technologies	Products
<p>5. Output material:</p> <ul style="list-style-type: none">• The technology output is:<ul style="list-style-type: none">○ Component material, for further processing○ Final end product• Homogenous• Biological, chemical, physical stabile• Which by-products will be produced	<p>5. Output material:</p> <ul style="list-style-type: none">• Type of end product• Product form (solid, fluid, grained, pilled, pelletized, meal, dust, spreadable goods)• Practical applicability, spreading, distribution, dosage.• Application method/form, machinery requirements• Homogenous• Biological, chemical, physical stabile

Q & A

Give your opinion on N & P's recovery products and technologies! Fill out our

[Farmer survey | NUTRIMAN.](#)

Thank you for the attention!



Please visit the [NUTRIMAN FARMER PLATFORM](#)

To stay updated on the NUTRIMAN project, subscribe to the [Newsletter](#)



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www.nutriman.net



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