



FER-PLAY recommends

Flagship outcomes and considerations for the
circular fertilisers community





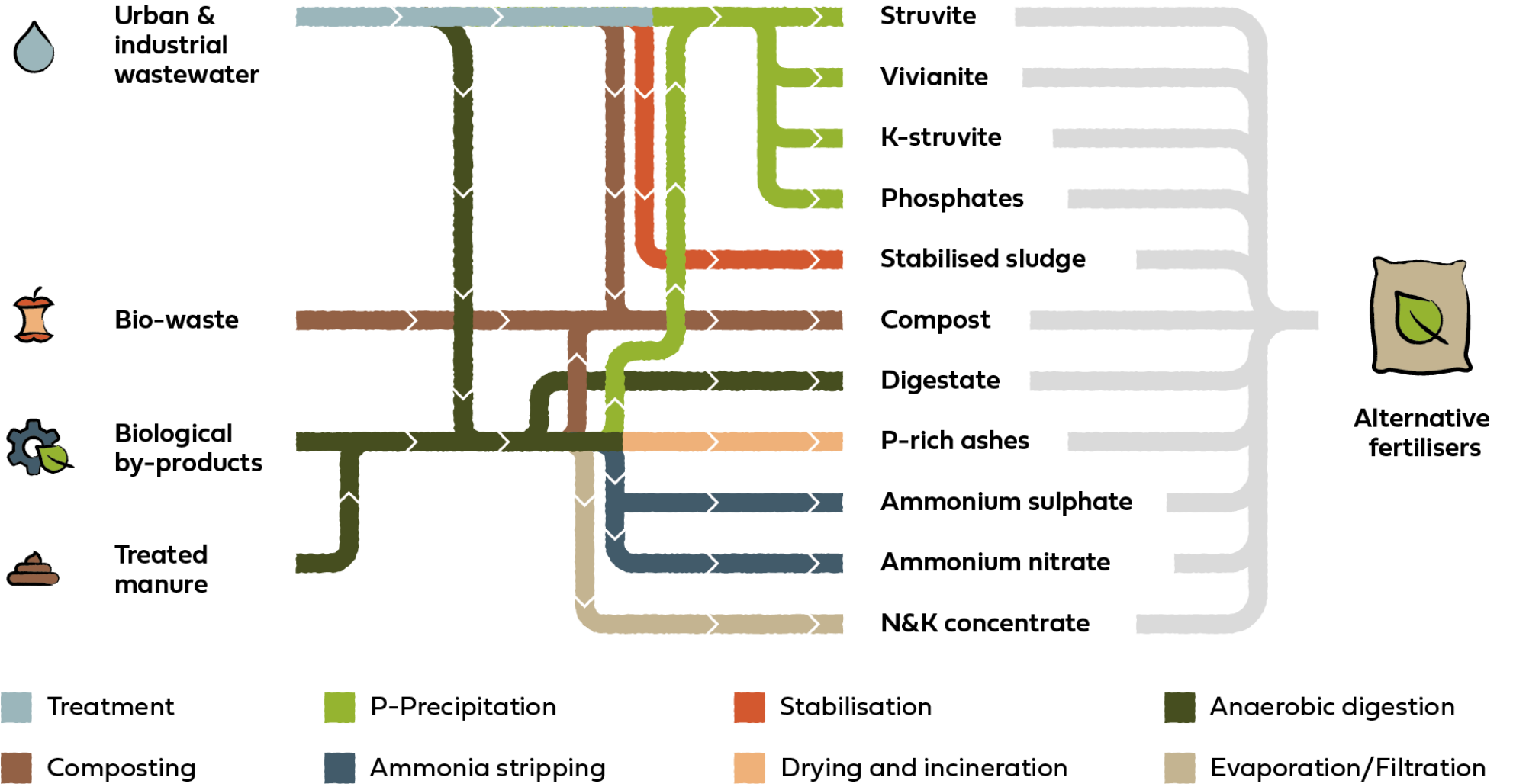
Collecting comprehensive data on circular fertilisers - FER-PLAY database

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Circular fertilisers

Waste/by-product stream → Processes applied → Products



Database

Data from

- Scientific publications
- Projects & initiatives
- Databases
- Statistics
- Market studies
- Partners/ networks
- Advisory Board
- Surveys

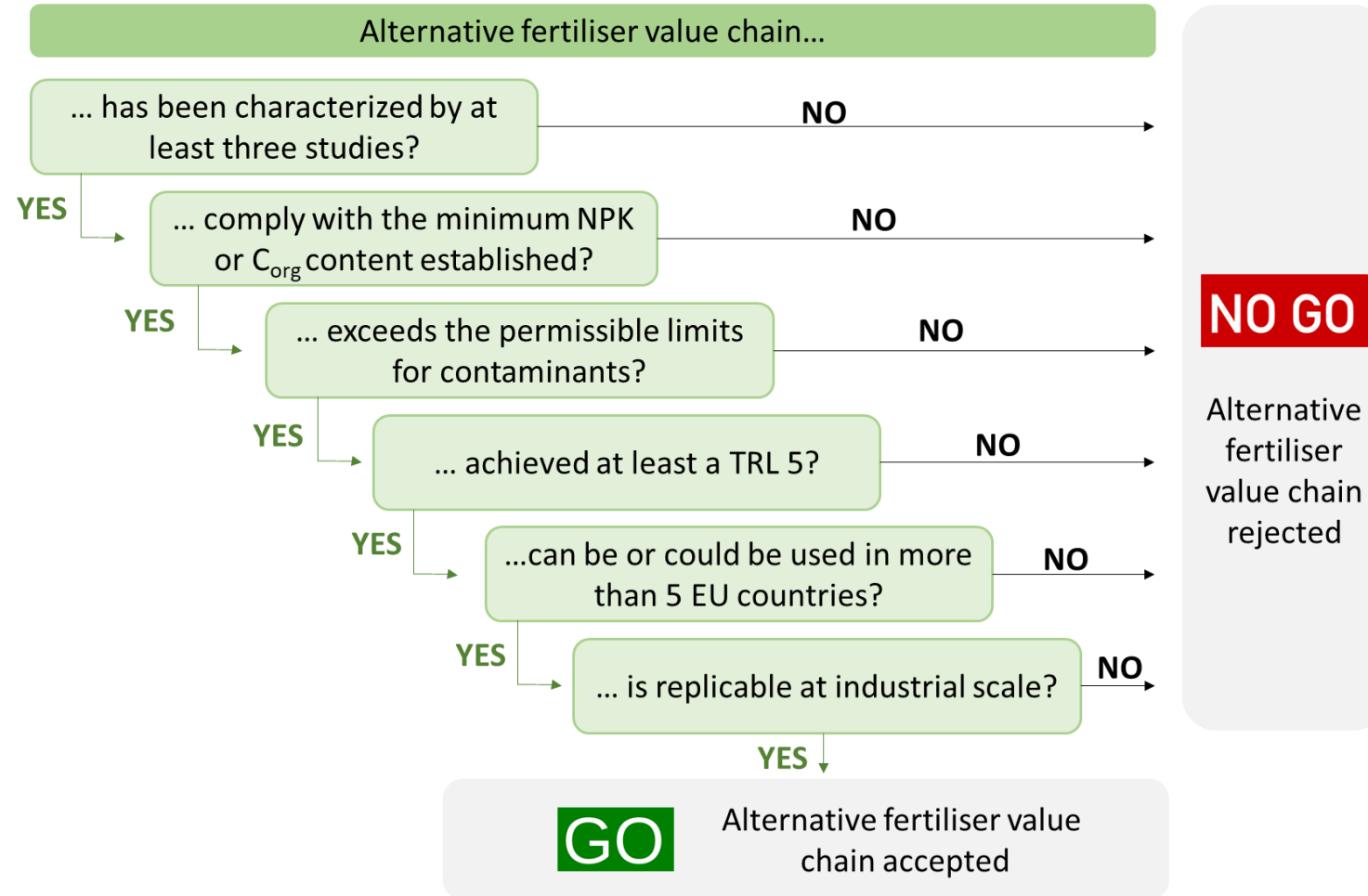
Data of

- Production
- Distribution/ trade
- Storage and application
- Nutrient content
- Application form
- Uptake speed
- Cost
- Legislation

Raw materials

- Urban waste water
- Industrial waste water
- Sewage sludge
- Bio-waste
- Biological by-products
- Digestate
- Treated manure

Value chain evaluation



Value chain evaluation

Criteria	1	2	3	4	5
Abundance	The lower abundancy	75% less ref	50% less ref	25% less ref	The highest abundancy (REF)
References	The lower references	75% less ref	50% less ref	25% less ref	The highest references (REF)
Production maturity	TRL 5	TRL 6	TRL 7	TRL 8	TRL 9
Forecasted volume	The lower production	75% less ref	50% less ref	25% less ref	The highest production (REF)
Marketability	-	Not marketable	-	Marketable	-
Transport and ease	Liquid or frozen or solid, flammable and toxic	Liquid or frozen or solid, flammable or toxic	Liquid or frozen, no Chemical Hazards	Solid, refrigerated	Solid, no temperature requirements
Storage and ease	Liquid or frozen or solid, flammable and toxic	Liquid or frozen or solid, flammable or toxic or emissions	Liquid or frozen, no Chemical Hazards	Solid, refrigerated	Solid, no temperature requirements
Ease of application	Manually	Mechanically located	Mechanically (located and random)	Compatible with existing technologies or possible of automation-mechanically	Compatible with existing technologies and possibility of automation
Organic production	-	Use not allowed	-	Use allowed	-
Manure?	-	Manure content	No manure content	-	-

Database demonstration

<https://fer-play.eu/resources/> > FER-PLAY database



Thank you for your attention





Recommendations to foster market uptake - for farmers, producers and local administrations

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36 co-creation events
4 countries (BE, DE, ES, IT)
1570 participants
linked with 17 initiatives

3 Guidelines with
recommendations (D3.1
D3.2 and D3.3)



Recommendations for END-USERS



The need of highly trained TECHNICAL ADVISORS



CIRCULAR
FERTILISERS



NON-RENEWABLE
FERTILISERS



SOIL HEALTH = SOIL PRODUCTIVITY

Recommendations for END-USERS



The need of highly trained TECHNICAL ADVISORS

- which CF to use (pedoclimatic conditions/local regulations)
- the importance of organic matter
- the availability of nutrients in C-rich CF
- the sustainability in economic terms
- dosage, timing and application
- where to procure them

Recommendations for PRODUCERS



Improving **commercial strategies** in the market



Building **trust** with end-users and the general society



Fostering **local acceptance** for settlement of production site

Recommendations for PRODUCERS



- Give proper value to your product
- Integrate services of interest for end-users in your commercial offer
- Adopt Voluntary Quality Assurance Schemes (QAS)
- Ensure transparent communication on product quality
- Disseminate the benefits of CF and key points to be aware of
- Explore alternative markets beyond arable land
- Build research partnership to foster knowledge on your product
- Join trade associations
- Fight against the NIMBY attitude

Recommendations for Public Administration



Recommendations for Public Administration



- Develop a robust bioeconomy strategy
- Promote the production and use of relevant CF for the territory
- Partner with other EU regions
- Contribute to the production of CFs acting on the quality of the feedstock

Thank you for your attention



How to scale-up circular Fertilizers Production

Wim Moerman (GreenTile BV)

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Table of contents

- Introduction NuReSys
- Technology versus circular fertilizer production
- Legal aspect
- Market approach
- Conclusions for circular fertilizers

Introduction NuReSys

Since 2010 active nutrient recovery: mainly phosphate

Mature technology : municipal and industrial applications

Initial focus on recovery but SWITCH towards **Integrated Phosphate Management**

Two markets: Technology

Product recovery

Added value product recovery = centralized collection and processing



Technology versus circular fertilizer production

NuReSys = no fertilizer producer

Technology can produce fertilizer

Economical drivers is not product sales

No forced market introduction

Each product \neq market



Pure struvite

Mixture struvite & organics

Struvite enriched biosolids

Legal aspects

New EU directive

PFC and CMC

Wide branch of options

Strictly regulated / Complicated / Clear regulation

National versus EU level

Centralize collection or direct valorization

Determine needs versus targeted market

Traceability

COMMISSION DELEGATED REGULATION (EU) 2021/2086
of 5 July 2021
amending Annexes II and IV to Regulation (EU) 2019/1009 of the European Parliament and of the Council for the purpose of adding precipitated phosphate salts and derivatives as a component material category in EU fertilising products

(Text with EEA relevance)

Market approach

Product quantity = relatively small

Niche market

As commodity

Supply guarantee

Market pull approach = product needs to be acceptable to market

Processing with existing equipment

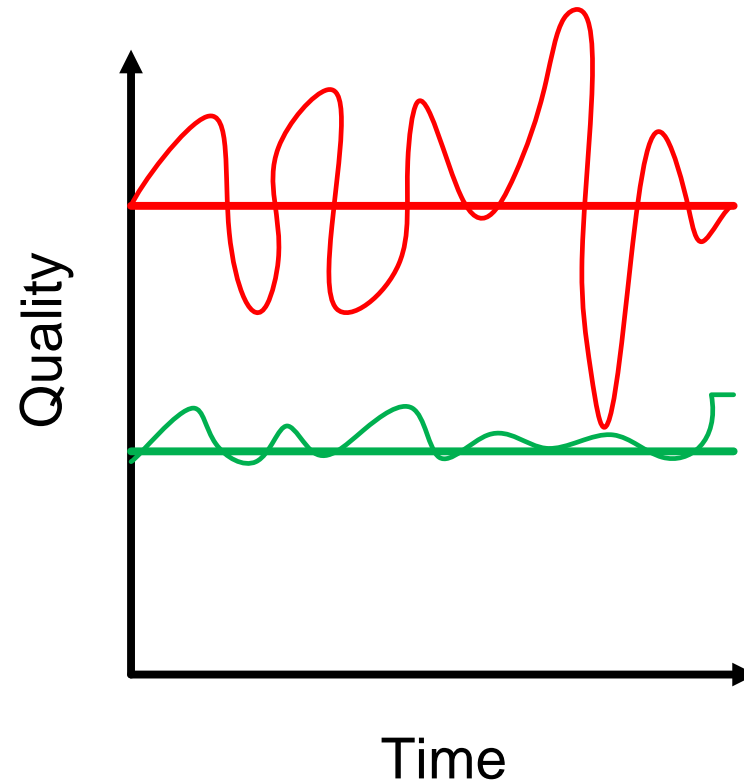
Maintain quality

Product properties needs to meet goal of final product

Look for multiple processors or alternative non-fertilizer use

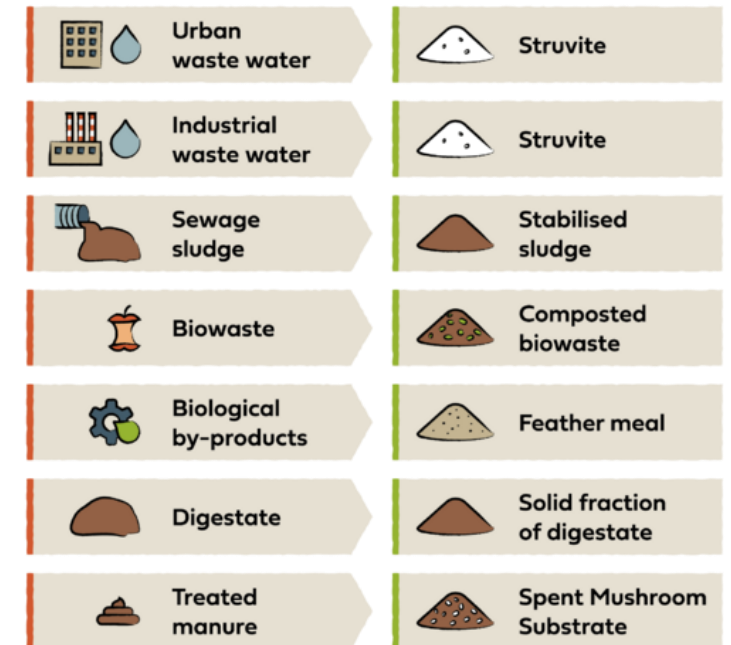
Market approach

Product quality = CONSTANT



Conclusions for circular fertilisers scale-up

- a. Do not develop process for circular fertilizer production
= *focus on possibilities of existing flows/products with new EU directive*
- b. Large quantities and constant quality and market-pull products
- c. Look for niche market, if possible local
- d. Promote added value = do not expect to get paid for it
- e. Develop your logistics with constant smaller flow before scale-up
- f. Have alternative market as plan B
- g. Quantity product benefits (CO₂ / NO_x /)



Thank you for your attention



Wrap-up and conclusions

Dr. Elisa Gambuzzi (CETENMA)



See you tomorrow!

More contents
Networking opportunity
Fertiliser Pilgrim Passport
and (maybe) some
chocolate



Event supported by:



DAY 2: 19 February Morning

Time	Activity	Speaker
08:30 – 09:00	Registration	---
09:00 – 09:10	Welcome	FER-PLAY coordinator Dr. José M. Soriano (CETENMA)
09:10 – 09:30	Keynote - R&D keys for market uptake of circular fertilisers	Prof. Erik Meers (Gent University)
09:30 – 10:30	Designing Policy Recommendations Keynote – Diagnosis: regulatory barriers hindering the market uptake of circular fertilisers. Round-table to co-create policy recommendations for circular fertilisers market uptake	Keynote by Ms. Lucile Sever (EBA) Moderation by Prof. Erik Meers (Ghent University) - NOVAFERT Round table speakers: Dr. Lucian Miron (Effost) - ReLEAF Mike Stinavage & Gemma Nohales (Fundació ENC) - LIFE BIOBEST Marcella Fernandes de Souza (Ghent University) – SEMPRE-BIO
10:30 – 11:00	Coffee break and expo corner	
11:00 – 12:00	Roundtable “Circular fertilisers: what’s next to be done? – directions from R&D projects” Streamlining research and innovation on nutrients recycling. Discussion involving other research projects working on the topic.	Moderation by Dr. José M. Soriano Disla (CETENMA) Round table speakers: Dr. Xialei You (LEITAT) - ReLEAF Dr. Hongzhen Luo (Ghent University) - NUTRI-KNOW Prof. Luboš Jurík (SUA) - NENUPHAR Dr. Teresa Alvaríño (CETAQUA) - WALNUT Mr. Wim Moerman (NuReSys) - bioSOILUTIONS, ValueWaste Mr. Bertrand Vallet (DG RTD)
12:00 – 12:15	Wrap-up and conclusions	FER-PLAY coordinator Dr. José M. Soriano (CETENMA)
12:15 – 13:15	Parallel Sessions Hybrid session for consumers, retailers, and local administrators – Circular Fertilisers: Chat on safety, benefits & market readiness? Networking session at the expo corner	Moderation by Ms. Beray Cayli (ACR+) Speakers: Mr. Werner Vogt-Kaute (Naturland) Ms. Vanesa Benito (GAIKER) Mr. Nicolas Scherrier (Brussels Environment) Ms. Morana Jednačak (IPS)
13:00 – 14:30	Networking lunch and expo corner	

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THIS HYBRID
SLOT!