

# NP- BALANCE

[www.npbalans.eu](http://www.npbalans.eu)

## NP-balance contacts

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Regional Council  
of Ostrobothnia



REGION  
VÄSTERBOTTEN



EUROPEAN UNION

Interreg  
Botnia-Atlantica

European Regional Development Fund

# NP-BALANCE

Adaptation of fertilizers from  
biogas digestate

The nutrient content in the digestate will be optimized by different techniques like co-digestion, recovery of phosphorous from reject water and digestate or by addition of nitrogen.

In field experiments and greenhouse experiments the plant nutrient utilisation of optimized digestate will be studied. We will analyse plant biomass and nutrient content at harvest and compare with plants from unfertilized and mineral fertilized treatments

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The project is a collaboration between Novia University of Applied Sciences (Vasa, Finland) and the Department of Agricultural Research for Northern Sweden at Swedish University of Agricultural Sciences (Umeå, Sweden). The project time is 15.1.2016 - 31.12.2018.

The project budget is 1 000 077 euro, financed by Interreg Botnia-Atlantica, Region Västerbotten, Regional Council of Ostrobothnia, Novia University of Applied Sciences and Swedish University of Agricultural Sciences

Project target groups are municipalities and companies in the biogas business, consultants in agriculture and forestry, fertilizer industry and companies and persons working in agriculture and forestry.



## DIGESTATE AS PLANT NUTRITENT SOURCES

Can we improve the nutrient balance in digestate before or after anaerobic digestion?

We will investigate:

- ⇒ pre-treatment of organic substrates before digestion
- ⇒ methane potential from co-digestion of different substrates
- ⇒ phosphorous recycling by struvite precipitation from reject water and digestate
- ⇒ optimize the nutrient balance by addition of struvite/nitrogen rich substances to digestate

### Agriculture

What is the best form for digestate?  
Liquid or solid?  
How important is soil incorporation?  
What season is best for spreading?

We will investigate:

- ⇒ uptake of nutrients and heavy metals in plants
- ⇒ growth and harvest
- ⇒ risk of leaching of nutrients
- ⇒ risk of surface runoff of nutrients and heavy metals

### Forestry

Which are the long term effects of digestate in forest?

In six 10-15 year old experiments, we will investigate:

- ⇒ risk of leaching of nutrients and heavy metals
- ⇒ tree growth

The results will provide a basis for advice on how to use digestate to maximize the benefits and minimize the risks, with the goal to contribute to lowering of eutrophication in rivers, lakes and coastal areas.