

# Upgrading of liquid manure:

- reduction of ammonia emissions
- production of natural organic fertilizer



**Successful R&I in Europe**

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## How it works: Lignite in manure upgrading acts as

- collector of plant nutrients: ammonia ( $\text{NH}_3$ ), ammonium ( $\text{NH}_4^+$ ), odors and phosphates
  - manure-lignite mixtures / separated solid and liquid products: no bad odors
  - Recycling of nutrients
  
- source of humic matter to improve soil fertility
  - increased capacity for water and nutrient retention
  - replacement material for peat

- **Know - how in / results from European RTD projects**
  - THERMIE Type A Action (Projekt No: SF/0261/97/DE-GR-AT)
  - Sustainable management of energy sources
- **Overview of Horst Meyrahn's scientific and technological excellence**

2016	Foundation of „Agrihumin GmbH“ Technology development: Upgrading of manure	
1985 - 2016	Industrial sector: R&D, biomass, renewable energy, Kyoto-projects, environmental protection, CO <sub>2</sub> -Monitoring, asset management, sustainable energy production	project manager
1981 - 1985	Max-Planck Institute for Chemistry, Mainz, Germany	ph.d. thesis / research fellow

## Topics I would like to explore in future joint Horizon 2020 projects

1. Upgrading of manure to a sustainable organic fertilizer
2. Reduction of odor and ammonia (NH<sub>3</sub>) emissions from manure
3. Recycling of surplus plant nutrients from animal farms (nitrogen, phosphate and sulfur) for use in the
  - ❖ landscape,
  - ❖ gardening and
  - ❖ fruit plantation sector
4. Upgrading of depleted soils with humic matter to improve water and nutrient holding capacity
5. Phosphate recycling

## Short description of the type and role of potential partners

Company / research institute working in one or more of the following topics:

1. animal farm with surplus of liquid manure,
2. active in solid/liquid separation of manure with interest to test and/or use lignite as natural flocculant,
3. active in agriculture / horticulture which needs organic fertilizer for soil improvement and replacement material for peat.
4. Recycling of phosphate

Agrihumin GmbH

1. offers technology consultancy and sharing of results
2. acts as well as sales representative of lignite producing company.

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