

## Activities

- Selection of the most representative livestock farms.
- Selection of the software, adaptation and development of the joint manure management at Catalonia level.
- Use of conductivity meters to know in situ the nutrient content.
- Optimization of manure transport and improvement of logistic management.
- Strategies of emissions reduction in ponds and poultry manure compost.
- Planning and optimization of fertilization. Efficiency improvement of organic fertilizers application.
- Crop management for a quality product rise.
- Dissemination of the project.

## Further details



**Total budget:** € 247.500,00

**Total financed:** € 187.931,00

**Main funding source:** Rural development 2014-2020 for Operational Groups

**Rural Development Programme:** 2014ES06RDRP009 Spain - Rural Development Programme (Regional) - Catalunya



**Ended,** 2017 - 2019



**Catalunya,** Spain



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## Manure Management Tools

# Development of manure management tools to improve efficiency in manure application



## Objectives

The wide objective was to develop innovative tools for manure management optimization and crop fertilization, from an economic and environmental sustainability point of view.

Specifics objective were:

- achieve a common manure and fertilization management;
- valorise manure by its fertilizer content and reduce the environmental impact;
- improve available technologic tools for management and adapt them to the farmer's needs.

*Trailing shoes, band spreading and nutrient content measurement*



## Results

### General results:

- Advice to farmers about manure management
- Slurry valorization by its fertilizing content improving available techniques in order to quantify necessary parameters
- Development of a traceability system which allows to follow the slurry truck route from the livestock farm to the crop farm including all relevant information of organic nutrient and soil composition.
- Cooperative and farms technicians been trained during the whole project development due to its implication.

### Specific results:

- Use of conductivity meters facilitate fertilization optimization and compliance with regulations, reducing environmental impact.
- Incorporation of GPS technology in trucks allows the traceability and optimization of transport.
- Acidification of slurry and addition of structuring material (such as cereal straw ) are relatively inexpensive tools which allow to reduce GHG and ammonia emissions.

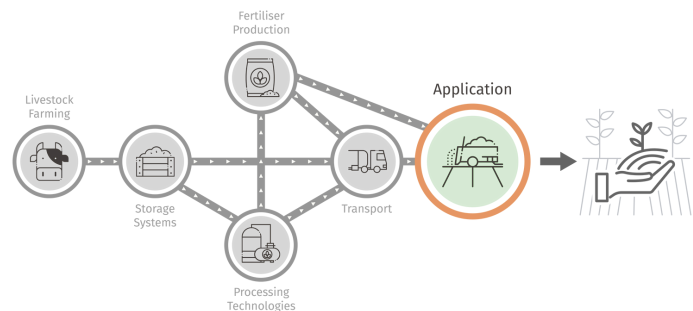
## Context

Livestock manure has always been considered as a great resource for agriculture due they provide nutrients, keeping soil structure, improving its capacity to retain water and avoiding erosion.

During years, livestock farms has become more intensive, causing an increase of manure generation and its management problems.

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### Location in the Nutri-Know value chain



Manure goes from a resource to waste, which uncontrolled application to lands means a high risk of soil, air and water pollution.

Until 2014 manure was treated in heating plants, drying it using biogas, but then government approved the new legislation "Real Decret 413/2014" about use of renewable energy. This new legislation made impossible for these heating plants to keep working, so it becomes essential to find new strategies and solution for the manure management. It is mandatory to have a good manure management to optimize crops productivity, maximize productions and minimize environmental impacts. In addition, this manure management, complemented with good fertilizing practices and crop management, allows quality improvement in crops, having more economic profitability for farmers.



NUTRI•KNOW

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