SEGES INNOVATION

STØTTET AF

Promilleafgiftsfonden for landbrug

Ministeriet for Fødevarer, Landbrug og Fiskeri

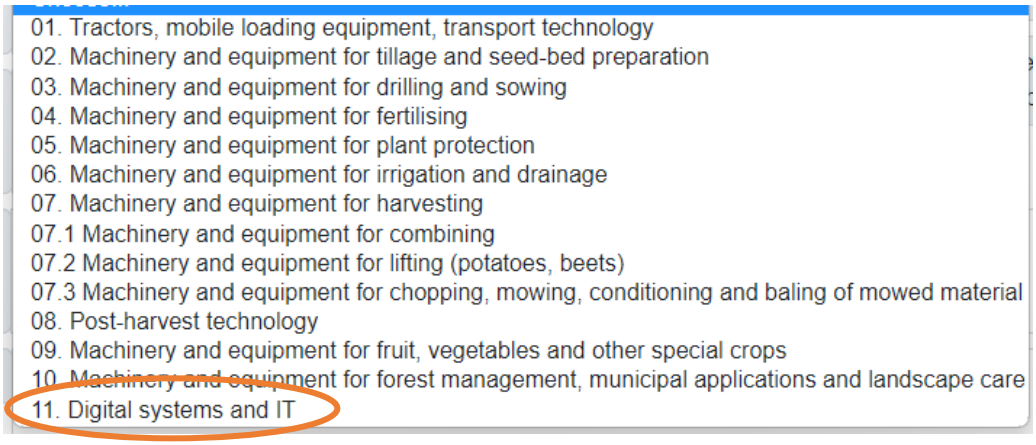
gudp

From the application for Agritechnica Innovation Award

Product name:

CropManager – slurry monitoring, eGylle

Subject



Is the product available until next year? Yes

Has it already won an award? No

Has the product already been presented to the public? If yes, where? No

Contact person for technical check back questions

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Short description

CropManager is a farm management tool for precision agriculture for seeding, fertilization and plant protection. Log data from slurry tankers will be improved by combining flow and content data of slurry. Instant measurements of nutrient concentration from NIR- or NMR-sensors enable the farm manager to improve site- and field-specific adaptation and to optimize the farms' nutrient management.

Innovative character

CropManager is introducing a new concept for monitoring application of slurry and integrating data into a whole and multiple farm management information system for arable crops. The farm management product extends the generic functionality for automatic data transfer of 'as applied' logs in the way that quality data from NIR- or NMR-sensors enrich the slurry amount flow data. The quality data for slurry enable the farm manager to adjust for actual nutrient content in applied slurry and accordingly to adjust any remaining nutrient requirements in following fertilizations. The key improvement for nutrient management is the integration of log data into management tools for nitrogen in order to minimize environmental impacts and optimize production economic impacts at the same time.

State of the art

The state of the art was at best a very low-tech 'guesstimate' or standard values of the nitrogen utilisation. It is revolutionary that we calculate the nitrogen utilization in organic manure taking into account the actual amount applied, the weather data at the time of application and the analysed nutrient content.

Special features/advantages?

For the farm manager the advantages are huge. Without slurry monitoring the amount of applied and actually utilized nutrients in the slurry is only a rough estimate based on national standards. The risk of not meeting the requirement of the crop is high, and in practice the requirement is only met +/- 40-50 kg of utilized nitrogen (in another context than Denmark it might be higher). The amount of applied utilized nitrogen is calculated based on: Amount of slurry (tons/ha), nitrogen concentration (kg nitrogen/ton) and utilization percentage (percentage of total nitrogen available for the crop). The slurry monitoring supplies all three parameters, and in the fertilizer plan the planned amount of utilized nitrogen is substituted by the calculated amount. By knowing the exact amount, the farmer can adjust subsequent applications of mineral fertilizer and ensure that the sum of applications to the crop meets the requirement, resulting in optimal economy and minimum environmental impact.