IK4 TEKNIKER
Research Alliance

Press release

Sensors used to monitor the spraying of pesticides

- *IK4-TEKNIKER collaborates with Goizper in the DigitalR project*
- *The aim of the initiative is to improve agricultural and food production*

(Eibar, Basque Country. 10 September, 2019).- As agricultural and protection techniques applied to crops are changing at a fast pace, only the very best methods and equipment must be selected to optimise soil yield.

Pesticides or plant-protection products have to be used in farming to maximise agricultural output and fully guarantee quality in accordance with current food requirements.

This sector requires, however, that specific doses of pesticides or plant-protection products be applied at plantations to prevent uncontrolled spraying that only produces product waste or evaporation and soil pollution as well as potential exposures of workers to chemicals.

Consequently, agriculture requires a Farming 4.0 solution to accurately spray plant-protection products rapidly and safely. Activity data must also be compiled to develop better strategies for the application of plant-protection products.

It is in this context that Goizper S. Coop., a company specialised in manufacturing spraying systems, and IK4-TEKNIKER are jointly involved the DigitalR project to develop new remote equipment and ensure that nozzles used to spray plant-protection products operate correctly.

More specifically, the aim of this project is to digitise manual equipment so that a pioneering solution can be offered in the field of agricultural spraying. In fact, the new remote equipment currently being developed by Goizper S. Coop. and IK4-TEKNIKER will make it possible to compile and manage information fed into spraying procedures and provide users with data on to efficiently manage manual application processes for which no electric cables or additional facilities will be required.

Real time information and cloud storage

But the project is also looking into a real-time and cable-free information gathering system that is connected to the grid, as well as a cloud storage solution, i.e., a set of analytical tools used to improve spraying strategies and data viewing tools for smart systems such as tablets, smartphones or PCs that use web applications.

A number of technologies are nowadays mainly based on monitoring pump outlets or spraying bars. The added value of this project consists in developing a custom-made proprietary sensor that is sensitive to the entire range of fluid typologies used whenever plant-protection products are applied. It operates reliably in aggressive environments and meets very restrictive cost and compacting requirements.

IK4-TEKNIKER is developing a measuring transducer (sensor element) designed to meet condition analysis needs of the fluid to be sprayed and a digital transducer signal analysis system with a wireless communication system to configure the system and transfer results.

The organisation is also designing and developing a mechanical-fluidic casing to structurally position internal components and maintain watertightness.

Finally, IK4-TEKNIKER will integrate the different elements and perform sensor laboratory tests to validate them with Goizper S. Coop. in a real environment application.

The end result of this project will be total control for how plant-protection products are applied as farmers will receive, among other things, information on whether the system is operating correctly before spraying as well as data related to dosing volumes, spraying conditions, humidity, wind and speed of the vehicle where the nozzles are installed.

Concerning IK4-TEKNIKER

With more than 35 years of experience in applied technology research that has been be transferred to companies, IK4-TEKNIKER has achieved a high degree of specialisation in four major areas (Advanced Manufacturing, Surface Engineering, Product Engineering and ICTs). This means that its cutting edge know-how has been made available to customers to meet their requirements.

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Further information

////////////////////////////
IK4-TEKNIKER | Itziar Cenoz
Itziar.cenoz@tekniker.es | Tel. (34) 943 256 929
////////////////////////////
GUK | Eider Lazkano
eider@guk.es | Tel. (34) 620 807 344
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