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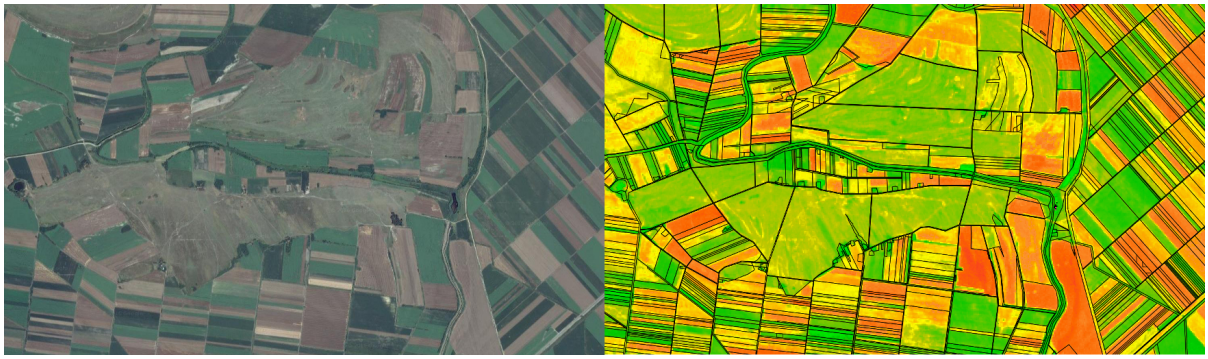
Environmental parameters monitoring using wireless sensor networks



Title	Environmental parameters monitoring using wireless sensor networks
Title (native language)	
Category	• Recording or mapping technology • Farm Management Information System • Robot or smart machine
Short summary for practitioners (Practice abstract) in English)	Development of a WSN application for precision agriculture, which is deployed in a pepper vegetable greenhouse. In particular, the paper presents the experimental setup and the preliminary results of the part of the application used for data measurement and data collection as well as initial concepts for improving the monitoring system. The proposed architecture is designed in order to improve the quality in agricultural production and would decrease the management and farming costs.
Short summary for practitioners	
Website	
Audiovisual material	
Links to other websites	
Additional comments	
Keywords	Farming equipment and machinery | Soil management / functionality | Water management | Climate and climate change
Additional keywords	
Geographical location (NUTS)	EU
Other geographical location	
Cropping systems	Arable crops | Open field vegetables
Field operations	Crop and soil scouting
SFT users	Farmer | Contractor
Education level of users	All
Farm size (ha)	0-2 | 2-10 | 10-50 | 50-100 | 200-500 | >500

Scientific article

Title	Environmental parameters monitoring in precision agriculture using wireless sensor networks

Full citation	Srbinovska, M.; Gavrovski, C.; Dimcev, V.; Krkoleva, A.; Borozan, V. (2015). Journal of Cleaner Production, DOI:10.1016/j.jclepro.2014.04.036

Effects of this SFT

Productivity (crop yield per ha)	No effect
Quality of product	No effect
Revenue profit farm income	No effect
Soil biodiversity	No effect
Biodiversity (other than soil)	No effect
Input costs	No effect
Variable costs	No effect
Post-harvest crop wastage	No effect
Energy use	No effect
CH4 (methane) emission	No effect
CO2 (carbon dioxide) emission	No effect
N2O (nitrous oxide) emission	No effect
NH3 (ammonia) emission	No effect
NO3 (nitrate) leaching	No effect
Fertilizer use	No effect
Pesticide use	No effect
Irrigation water use	No effect
Labor time	No effect
Stress or fatigue for farmer	No effect
Amount of heavy physical labour	No effect
Number and/or severity of personal injury accidents	No effect
Number and/or severity of accidents resulting in spills property damage incorrect application of fertiliser/pesticides etc.	No effect
Pesticide residue on product	No effect
Weed pressure	No effect
Pest pressure (insects etc.)	No effect
Disease pressure (bacterial fungal viral etc.)	No effect

Information related to how easy it is to start using the SFT

This SFT replaces a tool or technology that is currently used. The SFT is better than the current tool	no opinion
The SFT can be used without making major changes to the existing system	no opinion
The SFT does not require significant learning before the farmer can use it	no opinion
The SFT can be used in other useful ways than intended by the inventor	no opinion
The SFT has effects that can be directly observed by the farmer	no opinion
Using the SFT requires a large time investment by farmer	no opinion
The SFT produces information that can be interpreted directly	no opinion

View this technology on the Smart-AKIS platform

This factsheet was generated on 2018-Apr-03 11:57:18.