



Decision tool for reducing salinization risks



Title	Decision tool for reducing salinization risks
Title (native language)	
Category	<ul style="list-style-type: none"> Farm Management Information System
Short summary for practitioners (Practice abstract) in English	<p>The implemented GIS-tool based on open source gvSIG software was able to assess water leaching requirements in order to prevent the salinization risk of soils in olive orchards in the province of Jaen. Where LF was so high to be feasible, the GIS-based tool can recommend different mixing ratios for surface and underground water in order to decrease recommended LF thus making irrigation sustainable. The model was able to facilitate data analysis and processing, allowing the visualization of the spatial distribution and offering all the functionality of handling geographic data, which will be used in the planning and decision making. The proposed GIS-based tool is also able to provide fast map recalculation after an update of database, thus allowing one to adapt decisions to fast changes in water properties.</p>
Short summary for practitioners	
Website	
Audiovisual material	
Links to other websites	
Additional comments	
Keywords	Soil management / functionality Water management
Additional keywords	Leaching requirements; Water mixing; Salinization; Olive; GIS

Geographical location (NUTS)	EU
Other geographical location	
Cropping systems	Tree crops
Field operations	Irrigation Crop and soil scouting
SFT users	Farmer Contractor
Education level of users	Secondary education Apprenticeship or technical school education University education
Farm size (ha)	0-2 2-10 10-50 50-100 100-200 200-500 >500

Scientific article

Title	A GIS-based decision tool for reducing salinization risks in olive orchards
Full citation	Manuel Peragón, J.; Delgado, A.; Antonio Rodríguez Díaz, J.; Pérez-Latorre, F.J. (2016). Agricultural Water Management, DOI:10.1016/j.agwat.2015.12.005

Effects of this SFT

Productivity (crop yield per ha)	No effect
Quality of product	No effect
Revenue profit farm income	Some increase
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	Some decrease
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	Some decrease
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	agree
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	disagree
The SFT can be used in other useful ways than intended by the inventor	agree
The SFT has effects that can be directly observed by the farmer	agree
Using the SFT requires a large time investment by farmer	no opinion
The SFT produces information that can be interpreted directly	no opinion

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