THIS PROJECT HAS RECEIVED FUNDING FROM THE EUROPEAN UNION'S HORIZON 2020 RESEARCH AND INNOVATION PROGRAMME UNDER GRANT AGREEMENT N. 696294

Counting red grapes in vineyards

Title	Counting red grapes in vineyards
Title (native language)	
Category	• Recording or mapping technology
Short summary for practitioners (Practice abstract) in English)	This paper presents an automatic method for counting red grapes from high-resolution images of vineyards taken under artificial lighting at night. The proposed method is based on detecting the specular reflection peaks from the spherical surface of the grapes. These intensity peaks are detected by means of a morphological peak detector based on the definition of one central point and several radial points. The morphological condition applied is that the intensity of the central point must be higher than all the radial points. The grape counting results obtained in different occlusion conditions were compared with a manual labeling procedure.
Short summary for practitioners	
Website	
Audiovisual material	
Links to other websites	
Additional comments	
Keywords	Plant production and horticulture
Additional keywords	Automatic grape counting; Vineyard yield estimation; Specular reflection peak detection
Geographical location (NUTS)	EU
Other geographical location	Global
Cropping systems	Vineyards
Field operations	Crop and soil scouting
SFT users	Farmer | Contractor
Education level of users	
Farm size (ha)	0-2 | 2-10 | 10-50

Scientific article

Title	Counting red grapes in vineyards by detecting specular spherical reflection peaks in RGB images obtained at night with artificial illumination

Full citation	Font, D.; Pallejà, T.; Tresanchez, M; Teixidó, M; Martinez, D.; Moreno, J.; Palacín, J. (2014). Computers and Electronics in Agriculture, DOI:10.1016/j.compag.2014.07.006

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	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	agree
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 11:57:17.