Technology Offer

CLUAS: Assessment of Trees/ Trees Orchards Characteristic
For Precision Agriculture

A research group of the Institute for Sustainable Agriculture (CSIC, Cordoba, Spain) has developed a procedure to spatially assess key agronomic and environmental characteristics of tree orchards from remote sensing images through the software named Clustering Assessment® (CLUAS).

In the attached paper the CLUAS software development and the information generated by for selected olive orchards and its validation with ground-truth data is shown. CLUAS works as an add-on of ENVI®, and operates integrating the digital values (DV) of the neighboring pixels within a defined range of DV. In the orchards plots trees, other vegetation cover and bare soil were the land uses considered and the range of digital values (BDV) which best define each of them determined. CLUAS provides parameters of each tree, such as the geometric centre, the number of pixels or area, and the integrated digital values or relative potential yield. CLUAS also characterizes key parameters of tree groves, such as the total area and the number, area and the relative potential productivity of the whole trees; and similarly for the other land uses such as vegetation cover and bare soil. Remote images with spatial resolution from 0.25 to 1.5m were suitable for olive grove characterization.

CLUAS can contribute to the site-specific management of tree groves, providing quantitative information on each tree, small areas of an orchard, or whole orchards.

Publications


The owner of CLUAS software and CLUAS patent is the Spanish Council of Scientific Research (CSIC). Its Technology Transfer Office ([www.csic.es/vatc](http://www.csic.es/vatc)) allows using freely both only for research and academic purposes, requiring that its authorship should be mentioned with bold characters. Further contact: Alfonso Díaz-Morales alfonso.diaz@eez.csic.es; or lgarciatorres@ias.csic.es