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DEVELOPMENT OF A TRAINING PROGRAM FOR ENHANCING THE USE OF ICT TOOLS IN THE IMPLEMENTATION OF PRECISION AGRICULTURE

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Training package 2

Practical activity. Building an “Agricultural Database”.

Student guidelines

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1 Objective

The aim of this practical activity is to create an agricultural database, from data obtained in a vineyard field during the years 2018 and 2019, using the QGIS software.

In this practice you will also learn to work and interpret data obtained from different sources such as cartographic maps, satellite images and vegetation measurements.

2 Guidelines

Open QGIS software. You will have a new blank map.

Load the following layers that you will find in your training directory:

- Vineyard plot (Vineyard plot line.shp)
- Ortofoto map (of25cv40jk0f277126ss1r101.jp2)
- Topographical map (bt5mv20sd0f277126st1r060.sid)
- 10 NDVI images, 5 obtained during 2018 (NDVI_2018_06_11.tif; NDVI_2018_07_01.tif; NDVI_2018_07_20.tif; NDVI_2018_08_11.tif & NDVI_2018_08_29.tif) and 5 during 2019 (NDVI_2019_06_10.tif; NDVI_2019_06_30.tif; NDVI_2019_07_22.tif; NDVI_2019_08_08.tif & NDVI_2019_08_31.tif)

Examine and try to understand the data loaded before.

Classify the different NDVI images in 5 equal classes and show the image with a spectral color ramp (from red to blue).

3 Exercise

Get a layer points from each of the coordinate lists you have in your training directory (Coordinates canopy measurements.csv & Coordinates Soil measurements.csv).

Once you create both layers, in your training directory you will find the data related with the points obtained. You will find a document with the canopy measurements obtained on the same dates as the vigor maps. Also you will find a document with the soil analysis for each sample point.

This data should be introduced in the layer points generated previously using a “Join” process.



4 Questions

Answer the following questions using the material of the agricultural database built previously.

1. Which type of information can observe in the topographical map?
2. Do you think that the slope of the plot affected the results obtained in the soil samples? And the canopy vigor throughout the campaign?
3. Do you think that the vigor is maintained over time? What actions could be taken in the crop to achieve a homogeneous plot?