



Recent advances on the characterization of olive flowering in southern Spain

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Olive is an evergreen tree species that is cultivated in 10.8 million hectares all over the world, being more than 2.5 million hectares planted in Spain (FAO, 2017). Andalusia, in Southern Spain, is the main region of the world both by surface and production. This region is characterized by a great diversity of soil types and weather conditions. For this reason, the complete assessment of the Andalusian olive groves is complex. Flowering stage is a critical phase for olive yield and irrigation requirements, and then, the correct assessment of the factors that affect to flowering date is an outstanding factor in the improvement of crop management under different climatic conditions. This has a significant relevance considering the concerns associated to climate change and the profit reduction of the traditional Mediterranean agriculture. Temperature is a key factor in the flowering of olive trees and therefore has a critical impact on yield. It is therefore essential to know the components that affect to blooming in order to identify adaptation measures for Mediterranean olive orchards to the future climate.

Previous studies evaluated the variation in blooming dates in several olive trees varieties, located under different conditions (Navas et al., 2017) at 4 test fields located in different agroclimatic conditions in Andalusia: Gibraleón (Huelva), Antequera (Málaga), Baena (Córdoba) and Úbeda (Jaén). This study complements the above mentioned in terms of including four new varieties ('Ocal', 'Changlot Real', 'Carrasqueño de Alcaudete' and 'Arbosana') and additional seasons. Thus, we improved the characterization of the fields (mainly, soil properties and weather variables) and monitored the phenological status periodically during the 2016/2017 and 2017/2018 seasons. In all cases date of beginning, full and end of flowering was scored as well as the length of the flowering period.

In general terms, blooming date varies around one month between the different seasons, being 'Ocal' and 'Picual' varieties the earliest and the latest, respectively in all the locations. Nevertheless, a gradient within the regions was identified from west to east, regarding the beginning of blooming. These is likely due to the differences measured in the weather and edaphic variables (and their interactions), which have shown a relevant effect on this key phenological phase of the crop.

References:

Fao, 2017. <http://www.fao.org/faostat/en/#data/QC>

Navas-López, et al. (2017) Flowering phenology and flower quality of cultivars 'Arbequina', 'Koroneiki' and 'Picual' in different environments of southern Spain. In International Symposium on Flowering, Fruit Set and Alternate Bearing 1229 (pp. 257-262).