6th International Conference on Olive Tree and Olive Products

LIVE BIOTEQ'18

Seville / October 15th-19th

Olive Management, Biotechnology and Authenticity of Olive Products

BOOK OF ABSTRACTS

IRNAS Instituto de Recursos Naturales y Agrobiología de Sevilla

Consejo Superior de Investigaciones Científicas Instituto de la Grasas

CSIC

T08-P6

LONG-TERM STUDIES ON GROUND MANAGEMENT IN RAINFED OLIVE ORCHARDS

MANUEL RODRIGUES[1], CARLOS COREIA[2], JOSÉ MOUTINHO-PEREIRA[2], MARGARIDA ARROBAS[1]

[1]POLYTECHNIC INSTITUTE OF BRAGANÇA MOUNTAIN RESEARCH CENTER, [2]UNIVERSITY OF TRÁS-OS-MONTES AND ALTO DOURO CITAB

Two decades of research on soil management in rainfed olive groves, encompassing four experimental fields, one of which took eighteen years of continuous assessment, allowed comparative evaluation of several treatments including conventional tillage, residual herbicides, post-emergence herbicides, covers of natural vegetation (fertilized and unfertilized), sown covers managed as green manures and incorporated into the soil, or shredded and kept in the ground as a mulch, and sown covers of self-reseeding pasture legumes. This series of studies allowed showing that a better control of the herbaceous vegetation improves olive growth and yield and a greater development of the herbaceous vegetation improves several indicators of the soil fertility, which creates a great ambiguity. However, a large set of advantages comes from the use of early-season self-reseeding annual legumes. These plants present a very short growing cycle and develop asynchronously with the trees (in winter, during the resting period of olive), showing reduced competition for water, allowing high productivity even in rainfed conditions. Additionally, they protect the soil from erosion all year round, with live vegetation during winter and a mulch of dead vegetation during the summer, improve soil fertility, including the increase of soil organic matter, and are able to fix nitrogen improving the nitrogen nutritional state of the trees.

T08-P7

INFLUENCE OF THE CULTIVAR, DENSITY, IRRIGATION DOSAGE, AND ROW ORIENTATION IN THE PERFORMANCE OF HEDGEROW OLIVE ORCHARDS

DIEGO CABELLO, PABLO MORELLO, JUAN MORAL, DIEGO BARRANCO, LUIS RALLO, CONCEPCIÓN M. DÍEZ

UNIVERSIDAD DE CÓRDOBA AGRONOMÍA

The first super high-density (SHD) olive orchards were established in Spain in the 1990s. Since then, this system has significantly increased its presence in traditional and non-traditional olive growing countries with more than 100,000 ha worldwide. Due to the lack of experimental information on this new plantation system, the University of Córdoba established in 2011 three field trials designed to determine the effect of the cultivar, irrigation dose (1000 and 2000 m3/ha) and the plantation density in the yield of the olive hedgerow. Also, the influence of hedgerow orientation on the production of the 'Arbequina' cultivar was evaluated. We evaluated these field trials during five harvest seasons corresponding to 2013, 2014, 2015, 2016 and 2017.

The obtained results suggest: a) a linear relation between the increase of tree density and yield per hectare; b) significant productive differences between the five evaluated cultivars, 'Arbequina', 'Arbosana', 'Koroneiki', 'Sikitita' and 'Tosca', which would be indicative of their adaptation to high-density systems; c) a positive but not always significant influence of the highest irrigation dosage; and d) no significant influence of the hedgerow orientations, North-South, Northeast-Southwest, East-West and Northwest-South-East, in the production of 'Arbequina' under our experimental conditions. It should be noted that these are preliminary results five years after planting and they may differ from the later behavior of the adult hedgerow. For this reason, it is necessary to continue extend the evaluations to successive campaigns. It is expected that the information from these trials will help to optimize the design and management of super-intensive olive groves.