



Climate Changing Agriculture



Climate Changing Agriculture

International Conference

29 August – 2 September, 2017

CHANIA GREECE

Book of Abstracts

Editor: Dr. Georgios Koubouris



With the contribution of the LIFE + financial instrument of the European Union to the project “OLIVECLIMA-Introduction of new olive crop management practices focused on climate change mitigation and adaptation”



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Dear Colleagues,

During the past year, a group of devoted people worked hard and with great enthusiasm to prepare this event and welcome you in Chania, Greece for the International Conference "Climate Changing Agriculture". On behalf of all involved team mates I would like to express my pleasure for meeting you, having the chance to be informed of your research achievements and exchange views for climate change mitigation and adaptation.

This international conference is one of the final deliverables of oLIVE-CLIMA project. The oLIVE-CLIMA project (LIFE 11 ENV/GR/942), "Introduction of new oLIVE crop management practices focused on CLIMAtE change mitigation and adaptation" (oLIVE-CLIMA) is funded by 50% by the financial instrument Life + of the European Union and has a total budget of 3.649.373 € (EU contribution 1.822.436 €). It was launched in October 2012 and will be completed in September 2017. The project partners are the following: Development Agency of Eastern Thessaloniki's Local Authorities-ANATOLIKI S.A., Institute for Olive Tree, Subtropical Crops and Viticulture HAO DEMETER, Department of Soil Science of Athens HAO DEMETER, Soil and Water Resources Institute Former Land Reclamation Institute HAO DEMETER, University of Basilicata, Rodax Agro E.P.E., AGROTYPOS S.A., NILEAS Farmers Group, Agricultural Cooperatives of Peza, Agricultural Cooperatives of Mirabello.

This edition contains abstracts of papers presented in the conference following peer review and selection between a larger pool of submitted research works. Colleagues who are interested in publishing their work in the conference proceedings are invited to submit a four-page manuscript according to the instructions available in the website due 30th September 2017. Also, authors of selected papers will be invited to submit their full paper to be considered for publication in peer reviewed journals to be announced soon.

Many thanks to the LIFE programme for funding as well as all the involved institutions for co-funding and hard work. We wish you all a fruitful participation in the conference and a pleasant stay in Chania.

Kind regards,

Dr. Georgios Koubouris



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With the contribution of the LIFE + financial instrument of the European Union to the project “OLIVECLIMA-Introduction of new olive crop management practices focused on climate change mitigation and adaptation”

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Table of Contents

ORAL PRESENTATIONS	9
Management options contributing to climate change mitigation and resilience improvement in olive groves.....	10
A comparative estimate of climate change impacts on cotton and maize in Greece.....	10
Carbon footprint of rainfed and irrigated arable crops under tillage compared to no till & guide assistance.....	11
A tool for adaptation to Climate change Impacts on the Mediterranean islands' Agriculture: LIFE ADAPT2CLIMA	12
Effects of addition of organic materials and irrigation conditions on soil quality in olive groves: A case study of the region of Messinia, South West Peloponnese, Greece	13
Climate Change Impacts on the Hydrologic Balance and Irrigation Demands for the Region of Crete	14
Modelling of carbon fluxes and pools between soil, vegetation and atmosphere in crop fields under different agricultural practices.....	15
Impacts of climate change on reservoir management in Crete: the case of Potamon-Amariou Reservoir	16
Effect of different sustainable orchard management strategies on soil properties, nutrient uptake and soil microbiological aspects in an olive orchard.....	17
Crop coefficients and water use efficiency in an apple orchard assessed by eddy covariance measurements	17
Effects of addition of organic materials and irrigation conditions on soil quality in olive groves: A case study of in the region of Merambello, island of Crete, Greece.....	18
Crop production versus applied water	19
Climate change and olive farming. The case of olive growing in different agroecological zones and under different management systems in Crete, Greece	20
How can agriculture adapt to changing climate conditions? Social perceptions and new practices of farmers, a case study in Southern France	21
Carbon and nutrient distribution across soil profiles in Mediterranean olive forests.....	22
"Diversify & minimize": Agroecological approaches for reducing greenhouse gases emissions and increasing resilience of Mediterranean agroecosystems and rural societies	22
Climate change and water resources management in Arab countries.....	23



Description of olive cultivars through morphological parameters by using advanced mathematical algorithms	24
Interactions Effect of Cyanobacterial Bioactivities and Nitrogen Fertilizers on N ₂ O and CO ₂ Emissions and Soil Productivity	25
The direct and indirect effect of climate change on citrus production in Tunisia: a macro and micro spatial analysis.....	25
Adapting crop management practices to climate change: Opportunities and challenges for climate change adaptation in Pakistan	26
On the use of leaf spectral indices for real-time detection of physiological responses of olive under variable water conditions.....	27
Drones for Ship Emissions Monitoring at European Emission Controlled Areas	28
On-farm Implementation of ICT tools for sustainable irrigation management under climate change	29
Methods and challenges of remote sensing in climate change impact studies on agriculture	30
Spraying against the olive fruit fly using a Location Aware System (LAS).....	30
Modeling maize production in limited irrigation conditions for sustainable water use.....	31
Water erosion in olive and citrus tree crops under current and future climate conditions	32
Soil characteristics and nutrient estimation through spectroscopy	32
Contribution to the sustainability of solar photovoltaic irrigation systems: agronomy case study	33
Measuring environmental performance through agri-products environmental footprint and declaration - The case of Olive Oil.....	34
Influence of soil properties and geographic origin on the elemental composition of olive leaves and pomace.....	35
Environmental Impact Assessment of Sustainable Development	36
Conserving natural resources in a changing agro-environment: practices and policies.....	37
Effects of addition of organic materials and irrigation conditions on soil quality in olive groves: A case study of the region of Peza, Island of Crete, Greece.....	39
Assessing biodiversity and its ecosystem services in Andalusian olive orchards through the landscape moderation hypothesis	40
The buried diffuser a new efficient technology for olive trees plantations in climate change conditions.....	42
Airborne pollen dynamic in Northern Tunis from 2011 to 2016.....	42
Stakeholders' workshop: OLIVE – MIRACLE Modelling solutions for improved and resilient management strategies for Olive tree against future climate change	43



Using microbes in a climate changing agriculture: challenges and perspectives	44
LIFE PROSODOL: Strategies and tools developed by capitalizing project's achievements .	44
Growing lentils in a changing environment: cultivar selection and phosphorus fertilization as means for earliness	45
Yield improvement by using biostimulant products in winter wheat managed with No Till	46
Evaluation of land suitability for Olive Mill Waste distribution on soil.....	47
Seasonal variation effect on essential oil content and composition of <i>Pelargonium graveolens</i> cultivated in Crete, Greece	48
Optimization of cropping techniques under climate change conditions in Tunisia and its effect on the balance of carbohydrates and the quality of olive oil of the cultivars "Koroneiki" and "Chetoui"	49
Study of the impact of efficient irrigation by the use of innovative technologies on pomological parameters of olives and physico-chemicals of oils	50
Ecophysiological and biochemical response of Chemlali and Koroneiki olive tree cultivars under salt stress and gibberellic acid	50
Durability of the olive tree cultivation in arid conditions under the climate change	51
Fingerprinting of Olive (<i>Olea europaea</i> L.) germplasm in Tunisian national collection by using Simple Sequence Repeat markers	52
Water status and biomass response of two olive tree cultivars under water stress	53
Molecular and Agronomic characteristic of the local Tunisian olive cultivar Sradki.....	54
Inventory of phytopathogenic soilborne fungi causing wilt and die-back disease of olive tree in Tunisia and opportunities for biological control management	54
Survey of the <i>Fusarium</i> Species Associated to Olive-tree (<i>Olea europaea</i>) in Tunisia.....	55
An assessment of pan coefficient equations for calculating reference crop evapotranspiration (ET ₀) under the humid environment.....	56
POSTER PRESENTATIONS.....	58
Assessment of soil water content variation patterns in olive trees cultivation.....	59
Farmer's adaptation measures to changing climate in Karnataka state of India.....	60
The effect of photo-selective nets on yield and fruit quality of apple cv. Braeburn and peach cv. Suncrest under Croatian agro-climatic conditions	61
Effect of biological and mineral nitrogen on wheat productivity under newly reclaimed land conditions	62
Climate change effects on biochemical compounds and antioxidant activity of <i>Olea europaea</i> cv. Meski	62
LIFE-Stymfalia: The nature of business.....	63



Soil management in agriculture for climate change mitigation.....	64
The pH effect on soil selenium's absorption in plant tissues of lettuce (<i>Lactuca sativa</i> L.) and berseem (<i>Trifolium alexandrinum</i> L.), as affected by the application of sodium selenate	64
The olive grove a tool to develop mitigation strategies to climate change	65
Comparing reference evapotranspiration calculation methods to determine olive trees irrigation schedule in different bioclimatic stage of Tunisia	66
Bioclimatic Assessment Of A Representative Mediterranean Agroecosystem.....	67
Transpiration modeling and determining the climatic key component of the olive tree in Semi arid Tunisian area	67
The role of the olive tree in the protection against the hydric erosion (the case of the Tunisian sahel).....	68
OLIVE – MIRACLE Modelling solutions for improved and resilient management strategies for Olive tree against future climate change.....	69
Influence of climatic and bioclimatic parameters on the intensity and chronology of the <i>Olea europaea</i> L. pollen season in Tunisia	69
Assessing environmentally sensitive areas to desertification – An application in two Mediterranean watersheds.....	70
Different nutrient management strategies reduce soil N ₂ O emissions in olive orchards...	71
Does the application of post-harvest industry wastes reduce direct soil fluxes of N ₂ O in organic farming?.....	72
Carbon sequestration by cover crops in olive orchards.....	72
Evaluating water stress in irrigated durum wheat based on remote sensing techniques..	73
Ecophysiological response of two olive tree cultivars (<i>Olea europaea</i> L. 'Chemlali' and 'Koroneiki') under water stress and salt stress	74
Survey on orchard management practices applied in two olive growing areas of Crete, as compared to the approach proposed by LIFE AgroClimaWater project.....	75
Behavior of the olive tree Chemlali in climate change conditions.....	76
Broccoli cultivars for reducing atmospheric CO ₂ . Study of different cultivars grown under salinity	76
Wastewater Treatment By Floating Macrophyte (<i>Salvinia Natans</i>) Under Algerian Semi Arid Climate	77
Morphological variability among <i>Stipagrostis ciliata</i> (Desf.) De Winter accessions growing under North African arid bioclimate	77
Developing drought action plans at farmers' organization level in order to improve their climate change adaptation potential	78



Climate Changing Agriculture



The olive tree varieties behavior in different Tunisian area	79
Olive mill wastewater phytoremediation in a pilot scale unit using <i>Myrtus communis</i> and <i>Punica granatum</i> plants.....	80
Landscape influences on population dynamics of <i>Bactrocera oleae</i>	81
Certification organic snails and future market-consumption edible snails.....	82
Use of olive mill waste sludge and clinoptilolite as soil additives for pepper cultivation...	82
Influence of spreading olive-mill wastewater on earthworm survival and growth	83
Yield and quality of lettuce as related to hydroponic system and NaCl concentration in irrigation water.....	84
Effect of temperature on <i>Phelipanche Ramosa</i> Pomel parasitism on tomato crop	85
Physiological comparative study of halophytes and glicophyte plants for adaptation to Mediterranean salinity coastal areas	86
Fingerprinting of Olive (<i>Olea europaea</i> L.) germplasm in Tunisian national collection by using Simple Sequence Repeat markers	87
Allelopathic effects of <i>Acacia saligna</i> (Labill.) Wendl. and <i>Cupressus sempervirens</i> L. on germination and seedling growth of alfalfa in arid Mediterranean lands	87
Reducing the impact of drought by potassium application in olive trees (<i>Olea europaea</i> L.)	88
LIFE oLIVECLIMA partners	89
Conference Sponsors.....	90



Climate Changing Agriculture



ORAL PRESENTATIONS



Effect of different sustainable orchard management strategies on soil properties, nutrient uptake and soil microbiological aspects in an olive orchard

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Summary

The short-term (three years) effects of four sustainable orchard management schemes were evaluated in an experimental olive orchard in Crete, Greece, in terms of mineral content of soil and trees, soil microbial populations and mycorrhizal colonization. The study was performed between 2013 and 2015 in a forty-year-old olive plantation (*Olea europaea* L., cv. Kalamata). The orchard management schemes included: a) compost application (COMP), b) recycling of pruning material (PRUN), c) a mixed (legumes and *Avena sativa*) cover crop (COVER), d) combination of a, b and c (ALL), and e) control (CON), with no application of organic material and maintenance of weed-free orchard. Although alteration of basic soil properties including increase of organic matter and water and nutrient holding capacity are slow processes that require several years to be achieved, some positive effects were recorded during the first 3 years of application. Soil organic matter, was significantly increased in ALL treatment as compared to single-factor treatments, where differentiation from control was still not clear. Nitrate-N availability was higher in COMP and ALL treatments, while sole application of PRUN treatment seemed to act negatively in N availability as compared to control. Phosphorus availability was also increased in COMP and ALL treatments, while ALL treatment resulted in higher N and P content in olive tree leaves. A positive effect on mycorrhizal colonization was recorded in ALL treatment, while all sustainable schemes seemed to favor the populations of azotobacters and actinomycetes, as compared to the control. The adoption of the sustainable management schemes applied during this study, is in complete agreement with the European policy on the transition from a linear to a circular economy and could provide significant benefits for rural stakeholders and ecosystems in the long term.

Crop coefficients and water use efficiency in an apple orchard assessed by eddy covariance measurements