O-1 (180) Keynote Speaker
SUSTAINABLE IRRIGATION WATER MANAGEMENT FOR HORTICULTURAL CROPS IN DRY ENVIRONMENTS

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Water is considered as the most critical resource for sustainable development worldwide. It is essential not only for agriculture, industry and economic growth, but it is also the most important component of the environment, with significant impact on health and nature conservation. The agriculture worldwide today accounts for on average more than 70% of water used. Irrigated areas will increase in coming years due to climate change, while fresh water supplies will be diverted from agriculture to meet the increasing demand of domestic use and industry. Furthermore, the efficiency of irrigation is very low, since less than 65 % of the applied water is used by the crops. In order to overcome water shortage in agriculture it is essential to increase the water use efficiency and to use marginal waters (reclaimed, saline, drainage) for irrigation. The sustainable use of water is a priority for agriculture arid areas. Imbalances between availability and demand, degradation of surface and groundwater quality, inter-sectorial competition and inter-regional conflicts often occur in these regions. So, under scarcity conditions and climate change considerable effort has been devoted over time to introduce policies aiming to increase water efficiency based on the assertion that more can be achieved with less water through better management. Better management usually refers to improvement of allocative and/or irrigation water efficiency. The former is closely related to adequate pricing, while the latter depends on the type of irrigation technology, environmental conditions and the scheduling of water application. Agricultural practices, such as soil management, irrigation and fertilizer application and disease and pest control are related with the sustainable water management in agriculture and protection of the environment. They not only provide the soil moisture and nutrients necessary for plant growth, but they also contribute to control erosion, soil and groundwater degradation. Socio-economic pressures and climate change impose restrictions to water allocated to agriculture. The adoption of sustainable water management is not only a technological problem but involves many other considerations relative to social behavior of rural communities, the economic constrains, or the legal and institutional framework that may favor the adoption of some measures and not others. Sustainable water management in agriculture can be achieved by adopting improvements in irrigation application, soil and plant practices, water pricing, reuse of treated wastewater, farmers' participation in water management and capacity building.

Keywords: Irrigation; Water efficiency; Water reuse; Innovation; Capacity building