Application of low cost technology for the management of irrgation in organic orchads

Daniel Horcajo (1), Karina Patrícia Prazeres Marques (2), and Leonor Rodríguez Sinobas (1)

(1) TECHNICAL UNIVERSITY OF MADRID, Agricultural Engineering School Madrid, Spain
(leonor.rodriguez.sinobas@upm.es, (2) (2) Federal University of Pernambuco, Department of Geographical Sciences, Recife, Pernambuco, Brazil

Throughout history, humans have cyclically return to their old traditions such as the organic orchards. Nowadays, these have been integrated into the modern cities and could supply fresh vegetables to the daily food improving human health. Organic orchards grow crops without pesticides and artificial fertilizers thus, they are respectful with the environment and guarantee the food's safety . In modern society, the application of new technology is a must, in this case to obtain an efficient irrigation.

In order to monitor a proper irrigation and save water and energy, soil water content probes are used to measure soil water content. Among them, capacitive probes ,monitored with a specific data logger, are typically used. Most of them, specially the data loggers, are expensive and in many cases are not used.

In this work, we have applied the open hardware Arduino to build and program a low cost datalogger for the programming of irrigation in an experimental organic orchard. Results showed that the application of such as low cost technology, which is easily available in the market and easy to understand, everyone can built and program its own device helping in managing water resources in organic orchards .