

Launch of mobile app that controls the perfect amount of fertilizers and water

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Archive image of a field of olive trees. Credit: Pixabay

Fertigation allows for simultaneously applying the necessary water and fertilizers via irrigation systems. It offers significant advantages compared to other traditional methods, though it requires precise

calculations in order to be ideally used and managed, without using more fertilizer than the crop actually needs.

The Hydraulics and Irrigation research team at the University of Cordoba has just launched a [mobile app](#) called the Reutivar App that lets farmers control and measure the ideal amount of [water](#) and fertilizers to be used in these kinds of [irrigation systems](#). The purpose of this tool is to equip fertigation with scientific criteria and aims, a practice that is becoming more and more common but that, at times, can result in excessive use of fertilizers, such as nitrogen, which have a negative impact on the environment.

The research, carried out as the basis of Ph.D. work for researcher Carmen Alcaide and on which also participate researchers Rafael González, Irene Fernández, Emilio Camacho and Juan Antonio Rodríguez, is focused on olive orchards, key in southern Spain's economy and the crop with the largest area to irrigate in addition to being the crop with the largest water demand in the Guadalquivir basin. Besides, the research is based on using reclaimed water for agricultural use. This reclaimed water already has some macronutrient content and reusing it has become a strategic course of action in the EU within the bioeconomy, enabling us to deal with water shortages, among other things.

The application, developed with real data on [water quality](#) at a [pilot plant](#) located in Montilla (in the province of Córdoba), offers water users an irrigation and fertilizing calendar in real time, including the ideal amount of manure recommended. In order to do so, a series of calculations must be done using baseline data such as development and nutritional condition of the tree, past records and even weather forecasts.

The tool "lets us reduce the use of fertilizers, apply a controlled form of irrigation and properly distribute resources throughout the season,"

points out Professor Juan Antonio Rodríguez, so "not only will this provide environmental benefits but also financial ones for water users," he concludes.

More information: Carmen Alcaide Zaragoza et al, Open source application for optimum irrigation and fertilization using reclaimed water in olive orchards, *Computers and Electronics in Agriculture* (2020). [DOI: 10.1016/j.compag.2020.105407](https://doi.org/10.1016/j.compag.2020.105407)

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