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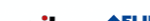
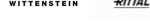
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## UGR researchers warn about the use of sewage in crop irrigation

14.12.2006

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**A doctoral thesis carried out by a researcher of the Institute of Water of the University of Granada (Universidad de Granada) has concluded that crop soils do not retain in a definite way inorganic pollutants, but they are released again with the passing of time.**

As a consequence, some compounds, like ammonia, potassium, sulfate, nitrate or phosphate, which are in sewage used for irrigation, are released again when it rains, so as they slowly arrive to the saturated area of the aquifer.

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The thesis, entitled Impacto del riego con aguas residuales sobre el suelo de la zona no saturada de la Vega de Granada (Impact of sewage irrigation on soil of the non-saturated area of the Vega of Granada), has been carried out by Kaltoum El Mabrouki under the direction of Professors José Javier Cruz San Julián and José Miguel Rodríguez Maroto. In addition to laboratory experiences, the work has been prepared by means of trials carried out in an experimental area.

Due to the shortage of water resources, especially in arid or semi-arid areas like those of Andalusia and Granada, sewage irrigation, treated or not, has become a usual practice. The researchers from Granada intended to confirm or refute a stated opinion, according to which soil retains

sewage compounds, so that pollutants do not reach the saturated area of the aquifer.

To the contrary, the thesis has proved that, in El Mabrouki's words, "there is a certain retention adsorption and a certain release desorption mechanism, since soil is a non-renewable resource and it adsorbs and desorbs the compounds, although this process is slower". Professor Cruz stresses that "it has been proved that soil adsorbs and retains a lot of sewage compounds, but they are released again when it rains, although this process is slower and, therefore, it will reach groundwaters some day".

The thesis concludes that the natural attributes of soils to filter compounds are more effective when it is about organic and microbiological pollution, which is the most representative part of sewage; however, such decontamination "does not take place to the extent thought until today". Soil receives other compounds like fertilizers, pesticides and nitrates, provided by farmers. Researchers specify that chlorination and drinking water treatment guarantee the healthiness of water when it reaches homes.

The authors of the research work recommend to use "with caution" sewage irrigation since "you can not irrigate with any sort of water, at any pace and in any season" and they insist that "the higher purification level, the better". In this sense, they remind that in other Spanish towns, like Vitoria, water is so pure that it could be consumed by people thanks to its high quality, although nowadays it is used for irrigation.

Antonio Marín Ruiz | Quelle: alphagalileo

Weitere Informationen: [www.ugr.es/prensa.ugr.es/prensa/research/index.php](http://www.ugr.es/prensa.ugr.es/prensa/research/index.php)

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