Chemical Composition of the oil extracted from *Jatropha curcas* irrigated with waste water

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This study provides a new perspective for the valorization of treated wastewater through irrigation of the energy crop *Jatropha curcas*. The first results showed that irrigation with treated wastewater has significantly improved the growth parameters of *J. curcas*. An increase in height, in the number of inflorescence per plant, and in the number of flowers per inflorescence was observed. In addition an improvement in oil contents of *Jatropha* seeds by approximately 30% compared to controls was observed. The results highlight the importance of NPK addition to the increase in productivity and oil yield of *Jatropha curcas*.

The analysis of the chemical composition of *Jatropha curcas* oil showed that this oil is unsaturated linoleic type and contains mainly linoleic (34%), oleic (20%), stearic (21 %) and palmitic (11%)fatty acids. The study showed that the composition of the oil is influenced by the soil and climatic conditions of the city of Oujda and, thus, by environmental factors.

Our study also showed that the oil of *Jatropha curcas* is capable of inhibiting the corrosion of steel in a solution of HCl (1 M). The inhibition efficiency increases as the inhibitor concentration increases to a maximum value of 99%. This feature can easily be valued in the industrial field.