Biomass production of *Arundo donax* L., a bioenergetic crop for the center of Buenos Aires province

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Summary

The impact of fossil fuels on the generation of greenhouse gases has intensified the study of new sources of renewable energy, such as energy crops. *Arundo donax* L. is one of the most promising crops for energy production due to its high growth rate and ability to grow under different conditions. In this work, the management of the crop is evaluated under potential conditions (with irrigation and fertilization) and real conditions (without irrigation, or fertilization), with the aim of determining its potentiality in Azul, center of the province of Buenos Aires. The crop was planted in the spring of 2019, using rhizomes at two densities, 2 plants m^{-2} and 1 plant m^{-2}. Measurements of height, number of stems, leaf area index (IAF) and interception of photosynthetically active radiation (IPAR) were made periodically. In the winter, the aerial part of the crop was harvested. In the first year of cultivation, the potential treatment produced a significant increase in all the parameters evaluated, reaching a value of efficiency in the use of radiation (EUR) of 1.24 g MJ^{-1} in the highest planting density. These differences are based on a higher interception of solar radiation and a higher maximum IAF.

Key words: Giant reed; bioenergy; climate change