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PRICKLY-PEAR: NUTRITIONAL DIFFERENCES BETWEEN AN IRRIGATED AND A NON-IRRIGATED CULTURE

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Opuntia ficus-indica is a plant native to Mexico. In the European continent, it has been gaining territory due to its behavior as an invasive plant adapted to poor soils. In Portugal, its presence is notorious in the Alto Douro and Alentejo regions, where summer temperatures are high and the soils dry. Although it is an invasive plant, both fruits and palms are edible, and its ability to grow in soils with little water availability makes it a plant adapted to climate change. Its cultivation in national territory is currently a reality, contributing to food diversity.

This study aimed to evaluate the nutritional changes due to irrigation in two samples from the region of Freixo-de-Espada-à-Cinta, Alto Douro. One of the samples was collected from a wild specimen, naturally present in the region, only exposed to rainwater. The second sample was collected from a specimen exposed to daily watering. The fruit samples were divided into the various parts (seed, skin, pulp and juice) for separate testing. AOAC [1] methods were used to determine the macronutrient content and the results were expressed in % dry weight.

The wild sample consistently presented a lower moisture compared to the watered one (79% and 82% in the whole fruit). The lipid content of the wild plant seed was more than 3 times higher than that of the plant that benefited from irrigation (2.4% vs 7.8%). The same happened in the protein content (10% vs 5%) and in the ashes (9.7% vs 4.9%) that were the double on the wild plant. The wild sample also showed a higher percentage of total sugar.

We can conclude that the plant has a better production of macronutrients in its wild state, with the absence of irrigation. These results demonstrate the plant's amazing adaptation to arid climates, encouraging its cultivation in unproductive lands due to lack of water.

Keywords: opuntia, *Opuntia ficus-indica*, prickly-pear

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