

# Plant Science

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## Physiological impacts on coffee plants submitted to water deficiency

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In this research, we evaluated biometric changes in coffee plants (*cv. Obatã* and *cv. Catucaí*) cultivated under water deficiency (WD). The trial was conducted in a greenhouse with coffee young plants growing in 5L pots and irrigated by drip system. The plants were submitted to water deficiency with three irrigation depths: L1-25%, L2-50% and L3-100% (5 repetitions) of the water requirement of the crop (WCN), applied in two cycles of water deficiency and interspersed with a reconditioning period. The results indicate that in the adaptation period, the plants of both coffee cultivars did not present significative differences for all analyzed growth parameters ( $p \leq 0.05$ ), where *cv. Catucaí* showed better results. Likewise, there was no difference in plant height, number of leaves, FW and DW of leaves and leaf area of the two cultivars. In the first cycle of stress, mainly for L1 there was decrease of the FW and DW of root and stem, as well as diameter of stem in response to the treatment. The *cv. Catucaí* was higher in relation to *cv. Obatã* for biometric parameters. For stem diameter, fresh and dry weight of stem, plant height and number of leaves, there was a difference due to water treatments. In the second HD cycle, it was verified that only the number of leaves was lower for *cv. Obatã*. Regarding the effect of the treatments, except for the number of leaves and height of plants for *cv. Obatã*, all other parameters showed differences ( $p \leq 0.05$ ) according to HD severity, with emphasis on L1 treatment. These results indicate that this cultivar is more sensitive to lack of water. It was also concluded that the recovery period between the DH cycles did not produce a new tolerance pattern regarding biometry, regardless of the cultivar.



Figure 1: General effect of water deficiency (WD) at the end of the second stress cycle

### Biography

Fernando Broetto has her expertise in Plant Biochemistry. She pursued both Master's and PhD from São Paulo University (USP), Brazil. She is involved in research and teaching at São Paulo State University (UNESP), Brazil from 1991. She has experience in Agronomy, focusing on physiology of cultivated plants, acting on the following subjects: Medicinal Plants, Plant Metabolism, Stress Responses.

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