STRESS TOLERANCE IN *CAESALPINIA PYRAMIDALIS* SEEDS: GERMINABILITY, CELL CYCLE ACTIVITY AND METABOLOMIC PROFILING

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SUMMARY *Caesalpinia pyramidalis* is a native species from the Brazilian semi-arid Caantiga region, which is intensively used by local communities for its wood and medicinal applications. *C pyramidalis* is generally well adapted to the natural semi-arid conditions. The (un)availability of water is regarded as a limiting factor to the initiation of seed germination, and is directly or indirectly involved in all stages of the subsequent metabolism. However, little is known about the mechanisms of drought and heat tolerance and survival of these seed species in such conditions. Therefore, the effects of water restriction and high temperatures were studied by analyzing the effects of combined heat and drought stress on the germinability, reactivation of the cell cycle and metabolomic profile of seeds imbibed under combined draught and heat stress. The acquired knowledge is intended for a better understanding of the adaptability and survival of this species to water restriction and high temperatures aimed at sustainable use by means of better protocols for propagation, conservation and restoration of degraded areas in the semi-arid Caatinga region of the Northeast of Brazil.

Keywords: *Caesalpinia pyramidalis*, germination, stress tolerance, sustainable use

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