

DIPLOMA THESIS

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BUDAPEST

Acclimatization of *in vitro* propagated *Vriesea splendens* 'Fire' on different substrates

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SUMMARY

Two independent experiments were developed to test the acclimatization process of *Vriesea splendens* 'Fire' on different substrates, such as, bark (B), coco coir (C), moss (M), perlite (P), turf or turf (T), vermiculite (V), bark + coco coir (BC), bark + moss (BM), bark + perlite (BP), bark + turf (BT), bark + vermiculite (BV), coco coir + moss (CM), coco coir + turf (CT), coco coir + vermiculite (CV), moss + perlite (MP), moss + turf (MT), perlite + turf (PT), perlite + vermiculite (PV), turf + vermiculite (TV). The characters evaluated were morphological (number of shoots, plant height, plant weight, leaf long, leaf width, root number, root length) and physiological (chlorophyll and carotenoid content).

The shoot number was higher on moss + perlite (1.57 pcs) in the first acclimatization. The plant height was affected in a positive way by the bark + perlite mixture (51.4 mm) also in the first trial. Belong to plant weight coco coir + vermiculite showed a significant increment in the individual's weight (1.18 g) in the first, and turf demonstrated the lowest plant weight (46.08 g) in the second experiment. In leaf length character only in the first trial, coco coir + turf had the superior (74.46 mm) and bark substrate had the lowest (37.67 mm) average. Regarding to leaf width, the widest leaves were developed on coco coir (6.88 mm) and the narrowest on bark (2.53 mm) in the first trial, and the less wide leaves from perlite + vermiculite mixture (4.66 mm) in the second acclimatization. In the case of the root number, the plants of the first trial produced more roots in moss (5.8 pcs) than the others, and in the second experiment coco coir + moss (4.83 pcs) and moss + vermiculite (6.46 pcs) showed less root number. The longest root only in the first acclimatization showed significant results presenting the largest root average on coco coir + perlite (20.71 mm) and the shortest mean on bark (8.07 mm).

Mostly, the physiological characters did not show a significant difference among the substrates, so increase the time of experimentation could be an alternative in future experiments to look for a possible concrete result. Finally, the acclimatization rate was also evaluated. It was the best with the 100% of individuals alive on vermiculite (in the first experiment) and turf, coco coir + moss, coco coir + vermiculite (in the second acclimatization). In the latter trial, bark resulted the lowest survival rate (50%), and in the first study, pure moss, moss + perlite equally effected the lowest value (not more than 44%).