

**EFFECTIVE ACCLIMATIZATION PROTOCOL FOR  
*IN-VITRO* PROPAGATED *Haworthia pygmaea*; A RARE  
SUCCULENT PLANT**

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## ABSTRACT

*Haworthia pygmaea* is a terrestrial, small herbaceous, flowering succulent in the family Asphodelaceae. This is a rare succulent species that propagate vegetatively. However, due to high demand and slow growth, traditional vegetative propagation methods are not effective. Hence, a rapid multiplication approach is required to cater the market demand. The ultimate success of the micropropagation is determined by the survival percentage of *in-vitro* raised plants during the hardening process and its subsequent growth. This study was aimed to develop an effective protocol for the acclimatization of *in-vitro* propagated *Haworthia pygmaea* with optimized subsequent growth. *In-vitro* raised plantlets at two growth stages were introduced into three distinct acclimatization media with the application of two types of fertilizers to achieve gradual growth and laid in a completely randomized design with four replicates for four months period. The results showed a clear relationship between the treatments and the growth parameters chosen as indicators of plant growth performances. The treatment combination of more than four-leaf growth stage which was treated with liquid organic fertilizer was shown to be the most effective for leaf initiation and increment of rosette diameter during the acclimatization period. This protocol will be useful in commercial propagation of *Haworthia pygmaea* in order to cater the market demand of this rare succulent.

**Keywords:** Hardening, Fertilizer, Media, Mortality, Growth stage