

## STUDIES OF *IN-VIVO* AND *IN-VITRO* GERMINATION ABILITY OF DRAGON FRUIT (*Hylocereus undatus*)

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Dragon fruit (*Hylocereus undatus*) is a well-popularized fruit species in countries like Thailand, China and have a great potential for cultivation in semi-arid regions of Sri Lanka. Plant propagation studies have not been carried out in Sri Lanka, and hence objective of this research was to study the *in-vivo* and *in-vitro* germination of Dragon fruit seeds and to select a suitable media for *in-vitro* establishment. Wet filter papers, wet sand, and wet coir dust were used to study the *in-vivo* germination and Hormone free, MS medium, Anderson's Rhododendron medium, and McCown Woody Plant medium incorporated with 1 g/l of activated charcoal was used to study *in-vitro* germination. *In-vitro* germination percentage was higher (100 % in Anderson, 98.5 % in MS, and 96 % in WP) when compared to seeds germinated in *in-vivo* conditions (50 % in Filter paper method, 45 % in Sand, and 35 % in Coir dust). Seedlings germinated in *in-vitro* conditions showed healthy vigorous growth and 15, 14, and 11 mm seedling heights were observed with fully opened cotyledons at the end of second week in Anderson, MS, and WP medium respectively. Though similar plant heights (15±2 mm) were observed, appearance of the seedlings was very weak, and cotyledons had not fully opened under *in-vivo* conditions. In both *in-vivo* and *in-vitro* conditions root system development was similar and root formation was observed within 6 days with 4±2 mm root length. Germination, plant height, and appearance of plants were best in Anderson medium. Results revealed that seeds could be successfully germinated in *in-vitro* conditions using Anderson medium supplemented with 1 mg/l activated charcoal as the establishment medium.