

Micro Cuttings Growth of White Dragon Fruit (*Hylocereus undatus* Haw.) at Various Variations of Murashige and Skoog (MS) Medium and Sucrose with *In Vitro*

ABSTRACT

In vitro culture techniques with micro cuttings of the dragon fruit is able to reproduce the plant in a relatively short time. In MS medium, sucrose commonly used is 30 grams, reduced levels of MS and the addition of sucrose concentration is expected to increase growth micro cuttings of dragon fruit. This study aims to determine whether there is interaction between variations in MS medium with different concentrations of sucrose, determining variation of MS most appropriate media, and determine the best sucrose concentration on the growth micro cuttings of white dragon fruit (*Hylocereus undatus* Haw.) with *In vitro*. Research conducted at the Laboratory of Biotechnology Faculty of Agriculture, UPN "Veteran" Yogyakarta from May to August 2018, using a completely randomized design (CRD) with three replications, The first factor is the variation of MS medium consists of four levels, namely: M1: 1/4 MS; M2: 2/4 MS; M3: 3/4 MS and M4: MS, The second factor is the concentration of sucrose which consists of three levels, namely: S1: 30 grams of sucrose, S2: 40 grams of sucrose, S3: 50 grams of sucrose. Parameter observations include: life percentage of plantlets, when the roots grow, the number of shoots, shoot length, number of roots, root length, fresh weight plantlets, dry weight of plantlets. The data were analyzed real diversity using the 5% ANOVA (Analysis of Variance) test. To know the real difference between treatments was tested further by using Duncan's Multiple Range Test (DMRT) at the level of 5%. The results showed that the combined treatment of 3/4 MS media and 40 grams of sucrose (M3S2) give the good results on the parameters of number of roots, roots length, and shoots length. The treatment of MS media (M4) can increase the fresh weight of plantlets. Treatment of various concentrations of sucrose showed no real influence on the life percentage of plantlets and fresh weight of plantlets parameters.

Keywords: dragon fruit, a variety of MS medium, sucrose, *in vitro*