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GROWTH OF SUGAR PALM (*Arenga pinnata*) IN VITRO

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Introduction

Sugar palm is a famous plant in tropical area, specially in Bali. Leaves (young and mature) can be used for traditional offerings. The problem is dormant period of seed is very long, almost one year.

Researcher has been studied sugar palm propagation in vivo and in vitro. Arsyad (2013) cultured plant embryo and produced seedlings aseptically, while embryo multiplication done by Wahyudi *et al*.(2013) using kinetin and NAA. Kartina *et al*.(2011) applied Murashige and Skoog (MS) media and IBA to promote root of *Arenga* in vitro. Dewi (2017) propagated sugar palm in vivo and in vitro with results of apocol emergence from sugar palm seeds. Apocol can be cultured as explant in vitro to reduce time of propagation. Therefor, 'apocol' was cultured to propagate plant in short period aseptically using media MS and woody plant medium (WPM) with auxin and cytokinin.

Research Methods

MS and WPM media can be used as basic media for culturing plant explant. Addition of 2.4-D 4 ppm is applied to induce callus of sugar palm "apocol". Randomised Complete Block Design with 2 factors, that is media composition (MS and WPM) and hormone addition (2.4-D 4 ppm, IBA and BAP 1.5 ppm, without hormon). Each treatment was replicated 4 times.

Figure 1. Culture of sugar palm (left) and subcultured of apocol (right)

Results and Discussion

Callus induction with 2,4 D in WPM

The experiment applied woody plant medium can produce callus from apocol with addition of 4 ppm 2.4-D at six weeks after cultured.

Figure 2. Callus at 9 weeks after subcultured (left)
and apocol after subcultured at 2 weeks (right)

MS and WPM medium

Subcultured using MS and WPM media enriched by hormon BAP 1.5 ppm and IBA 1.5 ppm.)

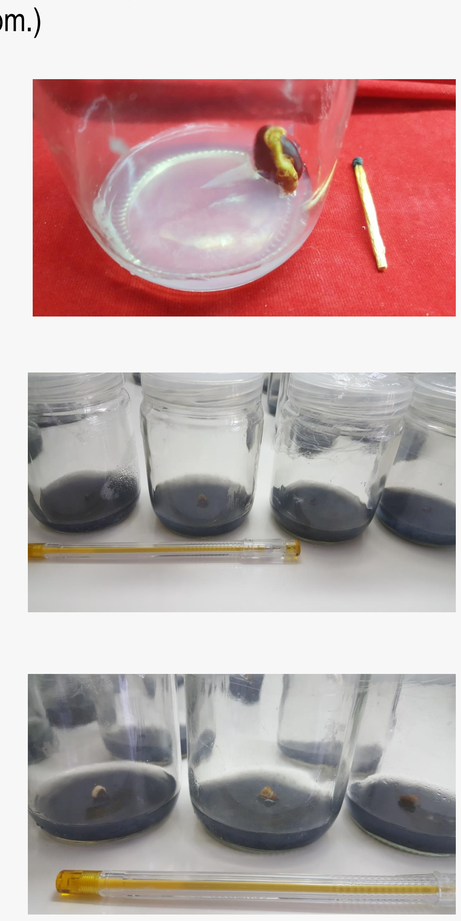

Figure 5. Explant sources (top);
apocol explant at 2 weeks after subcultured on WPM only (middle)
apocol growth with MS and IBA and BAP 1.5 ppm

Conclusion

Media composition and age of culture effect the growth of apocol.

Thank You Note

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Bibliography

Arsyad, M.A. 2013. *Embryo rescue* secara *in vitro* dan produksi bibit aren (*Arenga pinnata* MERR). Institut Pertanian Bogor, Thesis.

Dewi, N.K.Y.T. 2017. Perbanyakan tanaman aren secara *in vivo* dan *in vitro*. Prodi Biologi, FMIPA, Unud. Skripsi

Kartina, A.M., Nurmayulis dan Susiyanti. 2011. Pengaruh *Indole Butiric Acid* (IBA) terhadap pembentukan akar pada tanaman aren. J.Agrivigor 10(2):208-218.

Pamungkas, T dan L. Haryjanto. 2016. Konservasi *ex-situ* Aren (*Arenga pinnata* MERR). Balai Besar Penelitian Bioteknologi dan Tanaman Hutan. Yogyakarta.

Wahyudi, E., Ernita dan Fathurrahman. 2013. Uji Konsentrasi Kinetin dan NAA terhadap multiplikasi embrio aren (*Arenga pinnata*) secara *in vitro*. J. Dinamika Pertanian XXVIII (1): 51-62.