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## An efficient regeneration for micropropagation of *Morus* spp. using axillary buds

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**Aim:** *Morus* spp. known as mulberry plant contain many beneficial phytochemical. It has been suggested the multiplication with seed is slow and the root is weaker if stem cutting method is applied. The purpose of this study is to find the best composition medium in shoot induction, elongation, and rooting stage.

**Materials & Methods:** Four mulberry species were used in this research, *M. alba* var. *kanva-2*, *M. bombycis* var. *lembang*, *M. cathayana*, and *M. multicaulis*. Explants used were axillary buds. There are 3 stages of regeneration: shoot induction, elongation and rooting. Shoot induction medium is MS supplemented with benzyl adenine (BA) 2.25 mg/L and naphthalene acetic acid (NAA) 0.56 mg/L. Elongation medium is MS supplemented with BA (0.99 mg/L, 1.35 mg/L, 1.98 mg/L) and indole butyric acid (IBA) 0.41 mg/L. Rooting medium is ½ MS medium supplemented with IBA 1.02 mg/L and activated charcoal (AC) 1%. Data analysis was done by ANOVA.

**Findings:** *M. multicaulis* showed the best response in induction stage and showed the highest data in all parameters. In elongation stage, the highest shoot growth was recorded in MS medium supplemented with BA 1.98 mg/L and IBA 0.41 mg/L combination. *M. multicaulis* show the best response in shoot growth in this stage. In rooting stage, *M. cathayana* and *M. multicaulis* showed the significance difference in all parameters. ½ MS medium supplemented with IBA 1.02 mg/L and AC 1% more effective for rooting than control.

**Conclusion & Significance:** *M. multicaulis* is the best mulberry species which showed the best response in all stages and the best concentration of BA is 1.98 mg/L. Recommendations are made to apply precise amount of hormone concentration and hormone combination to develop the best protocol in mass propagation of *Morus* spp. and also to support in vitro conservation.

### Biography

Yasinta Ratna E Wulandari is a Lecturer at the Faculty of Biotechnology, Atma Jaya Catholic University of Indonesia, and is currently the Head of Plant and Tissue Culture Laboratory since 2015. She graduated from the Department of Biology, Bogor Agricultural University. She has received a number of academic awards, such as Atma Jaya Seminar Award in 2014 and 2015, and Asian Federation on Biotechnology (AFOB) award in 2015. She is interested in Plant Tissue Culture and Plant Biotechnology. She has worked on the regeneration of *Citrus mitis* and *Citrus reticulata* using somatic embryogenesis technique, mulberry micropropagation using plant growth regulator combination, determination DNJ compound from mulberry leaves and study gene expression in oil palm inoculated with *Ganoderma* that caused stem basal rot disease.

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