



ChemTech

International Journal of ChemTech Research

CODEN(USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555

Vol.10 No.4, pp404-411,2017

Various Infection Time of *Agrobacterium rhizogenes* Strain LB510 for Hairy Root Induction on *Justicia gendarussa* Burm.f.

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Abstract: This study aimed to determine the effect of various infection time *Agrobacterium rhizogenes* strain LB510 towards hairy root induction on *Justicia gendarussa* Burm.f. leaf explants. Various infection time are 10, 20, 30, 40, 50, and 60 minutes. Explants co-cultivated for 2 days in free-hormone solid medium, then transferred to solid MS0 medium supplemented with 300 ppm cefotaxime antibiotics. Culture incubated without light. Various data were collected, namely transformation efficiency, root formation duration, amount and length of hairy root. Observation conducted every week for 6 weeks. Data analyzed statistically using Kruskal-Wallis Test and followed by Mann-Whitney Test. Result shows that on each treatment of *Agrobacterium rhizogenes* strain LB510 infection duration influence the formation of hairy root from gendarusa leaf explants. On this study, 10 minutes is the best infection time in order to induce hairy root with highest transformation efficiency (100%), 2 hairy roots formed, the length of hairy root are 3.18 cm, and hairy root formation in 14 days.

Keywords: *Agrobacterium rhizogenes* strain LB510, hairy root, infection time, *Justicia gendarussa* Burm.f..