1/21/23, 11:19 AM HTML / Printer-friendly

**AgSURS - Reviewer 1 View**

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| **Abstract Title** | Efficient Protocol for inducing somatic embryogenesis in Transgenic Papaya (Carica papaya L.) using poly ethylene glycol |
| **Abstract Body** | Papaya (Carica papaya L.) is a fast-growing semi-woody tropical herb that belongs to the family Caricaceae. Papaya ring spot virus is a serious disease that affects papaya production in most countries in the world including in Sri Lanka. The development of transgenic papaya through Agrobacterium-mediated transformation of somatic embryos is a successful method to control the damage of papaya ring spot virus disease. To induce somatic embryogenesis in transgenic papayas callus, it needs an efficient protocol. The present investigation aimed to develop an efficient in vitro protocol for inducing somatic embryogenesis in transgenic papayacallus by supplementing different concentration of polyethylene glycol. Three weeks old callus was used for *Agrobacterium*-mediated callus transformation and co-cultivation. The transformed calli were selected with Kanamycin 50 mg/L in co-cultivation medium. The co-cultivated callus was inoculated on to Murashige and Skoog medium with Kanamycin 50 mg/L and Cefotaxime 500 mg/L. Another experiment was conducted using eight weeks old embryogenic callus. After *Agrobacterium*-mediated callus transformation and co-cultivation, the calli were inoculated in to regeneration medium which contained different concentrations of polyethylene glycol, Kanamycin 50 mg/L and Cefotaxime 500 mg/L. Highest number of transformed callus was obtained from eight weeks old embryonic callus. The highest callus area growth rate was recorded in full strength MS medium which contained PEG 60 mg/L with average 28.55%. Both highest number of somatic forming callus and matured somatic forming callus was recorded in full strength MS medium which contained PEG 60 mg/L. As a conclusion, a protocol for in-vitro regeneration of putative transgenic papaya was developed. Poly ethylene glycol 60 mg/L is the most suitable concentration for somatic embryogenesis. Eight weeks old embryonic callus was more suitable for Agrobacterium-mediated co-cultivation. |
| **Key Words (5 Words)** | polyethylene glycol, regeneration, transgenic papaya |
| **Abstract ID** | CIPP0857 |
| **Findings of this study (r1)** | ……………………………………………………………………………………………………………………………………..   1. Make a significant contribution to existing knowledge 2. Make a marginal contribution to existing knowledge 3. Contain conceptual errors/faulty judgments 4. Confirm known results |
| **Title of the abstract(r1)** | …………………………………………………………………………………………………………………………………….   1. Is appropriate to the thematic area and descriptive 2. Needs improvement |
| **If needs more improvements for**  **"Title" please specify here(r1)** | Please see the track changes used editing the title |
| **The content of the abstract(r1)** | ………………………………………………………………………………………………………………………………………   1. Is clear and concise 2. Needs improvements |
| **If needs more improvements for "Abstract" please specify here(r1)** | See the edited abstract |
| **Recommendation(r1)** | ………………………………………………………………………………………………………………………………………   1. Accept in the present form with minor editorial corrections 2. Accept with minor corrections 3. Accept with major revisions cited 4. Reject |
| **Please justify reasons for If rejection(r1)** |  |
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