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**AgSURS - Reviewer 1 View**

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| **Abstract Title** | Development of Efficient *In vitro* Regeneration Protocol for Transgenic Papaya (*Carica papaya* L.) |
| **Abstract Body** | Papaya (*Carica papaya* L.) is a fast-growing semi-woody tropical herb which belongs to the family Caricaceae. Papaya ring spot virus is a serious disease that affects the papaya production in most of the countries in the world as well as in Sri Lanka. 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 regenerate these transgenic papayas, need an efficient in vitro regeneration protocol. The present investigation aimed to develop an efficient *in* *vitro* protocol for regeneration of transgenic papaya (*Carica papaya* L.) using somatic embryogenesis by supplementing different concentration of poly ethylene glycol. Three weeks old callus was used for Agrobacterium mediated transformation and co-cultivation. The transformed callus was selected with Kanamycin 50 mg/L in co cultivation medium. Then the co-cultivated callus was inoculated on new Murashige and Skoog medium with Kanamycin 50 mg/L and Cefotaxime 500 mg/L. Another experiment was done using eight weeks old embryonic callus. After Agrobacterium mediated callus transformation and co-cultivation, the callus was inoculated in to regeneration medium which contained different concentrations of poly ethylene glycol, Kanamycin 50 mg/L and Cefotaxime 500 mg/L. Number of highest 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 (*Carica papaya* L.) 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)** |  |
| **The content of the abstract(r1)** | ………………………………………………………………………………………………………………………………………   1. Is clear and concise 2. Needs improvements |
| **If needs more improvements for "Abstract" please specify here(r1)** | Some sentences are not clear and should use the correct technical terms as mentioned, i.e. What is somatic forming callus? |
| **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)** |  |
| **Any Other**  **Comment(r1)** |  |
| **Any Other**  **Attachment(r1)** |  |

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