Use of Linearized Plasmid/DNA Fragment for Genetic Transformation of Creeping Bentgrass. (C07-jayaraman165409-Poster)

Authors:

- J.Jayaraj* - *Kansas State University*
- D.Fu - *Kansas State University*
- H.Yi - *Kansas State University*
- G.H.Liang - *Kansas State University*
- S.Muthukrishnan - *Kansas State University*

Abstract:

Use of whole plasmid constructs for plant transformation generally leads to integration of vector back borne sequences into the host genome along with the transgenes. This causes undesirable effects on the expression of transgene, and endogenous genes as well, and often may lead to rearrangement of transgene.In the present study we attempted to investigate the effectiveness of three types of DNA namely, gene cassette comprising of promoter, gene, and terminator, linearized plasmid, pZP201 GFP and, whole plasmid, pZP201 GFP. We used Green fluorescent protein, GFP gene driven by maize ubiquitin promoter for the study. Calli of creeping bent grass were bombarded using a gene gun with the above three DNAs individually and, examined for the expression of GFP under UV fluorescence. The number of green fluorescent spots were in the decreasing order of, gene cassette, linearized plasmid, followed by whole plasmid. Analysis of the genomic DNAs extracted from transgenic calli through PCR, demonstrated the integration of GFP gene into the genome. Our study results confirm the feasibility of using simple gene cassette for plant genetic transformation.

Corresponding Author Information:

Jayaraj Jayaraman
Kansas State University
TH3411, Agronomy, KSU
Manhattan, KS 66506

phone: 785-532-6939/7226
fax: 785-532-7278
e-mail: jaya@ksu.edu

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