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Development of glyphosate-tolerant transgenic potato plants harboring the G2-aroA gene

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Glyphosate weed control is a very effective strategy to minimize cost and improve economic outcomes of world and Pakistan agriculture production. Development of glyphosate-resistant potato hold great promise. A new G2-aroA gene from *Pseudomonas fluorescens* which encodes 5-enolpyruvylshikimate-3-phosphate synthase (EPSPS) was transformed by using an *Agrobacterium*-mediated transformation into potato cultivar AGB-Red. Transgenic potato plants were generated via node tissue culture method, using kanamycin selection. Ten regenerated potato plants were obtained and allowed to grow normally in pots under

normal conditions. The Polymerase Chain Reaction (PCR), Southern Blotting and Western Blotting analysis confirmed that the target gene was integrated and expressed effectively into potato chromosomes at the very potential level. The glyphosate tolerance assay showed that transgenic potato had a high resistance level to glyphosate. Furthermore, potato plants treated with 50.0 mmol/L of glyphosate could grow slowly and can develop tubers. It was concluded that transgenic potato may be used for cotton breeding research of glyphosate-tolerant potato.

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