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Cucumeropsis mannii Seed Oil Annuls Dysregulated Fertility Hormones, Kidney Function Indices, and Glucose Level in Bisphenol-A Exposed Male Wistar Albino Rats

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Dormancy plays key role in potato crop production. This phenomenon affects sprouting vigour as well as the shelf life of potato tubers. Present work was carried out to have a better understanding of dormancy through phytohormonal application, morpho-physiological response, gene expression and transcriptomic data analysis. In-silico analysis of publically available potato RNA-seq SRA data of dormant tuber (DT), dormancy release tuber (DRT) and sprouting tuber (ST) revealed that majority of the transcripts were related to cellular component, cellular process and signalling and biological pathways of purine and carbohydrate metabolism. A total of 4,052, 3,654 and 2,075 differentially expressed genes were found for DT&DRT, DT&ST and DRT&ST conditions, respectively. Field experiments were conducted to study the effects of gibberellic acid and auxins on two promising potato varieties i.e., Kufri Bahar and Kufri Surya. Kufri Surya has inherently delayed plant emergence in comparison to Kufri Bahar under high temperature stress conditions of September planting in north Indian plains. Seed tuber priming for 24 hrs with GA3 (1.0 mg/ml) has substantially accelerated the plant emergence in Kufri Surya, thereby adding 7 to 10 days in productive phase in short duration crop. To investigate the delayed plant emergence, various metabolic pathway related genes were validated in the wet lab which demonstrated the reproducibility of RNAseq as well as response to phytohormonal applications.

Biography

Mr. Agu Peter Chinedu is a collaborator of Associate Professor Patrick Maduabuchi Aja's research colleagues. Mr. Agu studied Science Laboratory Technology as well as biochemistry at Our Savior Polytechnic and Madonna University, Nigeria, respectively, where he had profound academic excellence. He had a master's degree in biochemistry (medical biochemistry) and is currently a Ph.D. scholar at Ebonyi State University Abakaliki, Nigeria. He is a virtual life member of the Bioinformatics Club for Experimenting Scientists (BIOCLUES) Society, India. His area of research interests is reproductive and endocrine toxicity, Cancer chemotherapy, neurodegenerative diseases, molecular biology, nutraceuticals, and natural products.

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