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Evaluation of *Agrobacterium*-mediated Transformation of Two Nigerian Cassava (*Manihotesculenta*Crantz) cultivars TME 419 and "Okwuoto"

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Abstract:

For efficient transformation of cassava to enhance the productivity of the crop, developing effective protocol for the genetic transformation is necessary. Ten Nigerian cassava cultivars were screened *in vitro* for production of friable embryogenic callus (FEC) and transformation using *Agrobacterium tumefaciens*. All the ten cassava genotypes screened produced organized embryogenic structures (OES) on Driver and Kuniyuki Walnut(DKW)medium supplemented with 50 µM picloram between two to four weeks after culture using immature leaf lobes as explants. However, the percentage of OES formation was variety dependent. TMS 96/1632 gave the highest percentage of OES (66%) in comparison to the TMS 60444 that served as control which produced 80% of OES. Conversely, friable embryogenic callus (FEC) production was achieved only in four cultivars – two improved varieties (TMS 96/1632 and TME 419) and two local land races ('Okwuoto' and 'Nwugo') in comparison to that produced by TMS 60444. In cassava somatic embryogenesis, generation of FEC is very important because they are the target tissues for transgene insertion.

Key words: *Agrobacterium tumefaciens*, friable embryogenic callus, green fluorescent protein, transgenic.

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