World Academy of Science, Engineering and Technology
International Journal of Agricultural and Biosystems Engineering
Vol:11, No:07, 2017

Somatic Hybridization of between Citrus and Murraya paniculata Cells Applied by Electro-Fusion

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Abstract : Protoplasts isolated from embryogenic callus of Citrus sinensis were electrically used with mesophyll protoplasts isolated from seedless Citrus relatives. Hybrid of somatic embryos plantlets was obtained after 7 months of culture. Somatic hybrid plants were regenerated into normal seedlings and successfully transferred to soil after strictly acclimatization in the glass pot. The somatic hybrid plants were obtained by screening on the basis of chromosomes count. The number of chromosome of root tip counting revealed plantlets tetraploids (2n = 4x = 36) and the other were diploids (2n = 2x = 18) morphologically resembling the mesophyll parent. This somatic hybrid will be utilized as a possible pollen parent for improving the Citrus sinensis. A complete protoplast-to-plant system of somatic hybrid was developed for Citrus sinensis and Citrus relatives which could facilitate the transfer of nuclear and cytoplasmic genes from this species into cultivated Citrus through protoplast fusion.

Keywords : chromosome, Murraya paniculata, protoplast fusion, somatic hybrid, tetrapoliod
Conference Title : ICAFE 2017 : International Conference on Agriculture and Food Engineering
Conference Location : Prague, Czechia
Conference Dates : July 09-10, 2017