

Effect of BAP and coconut water on growth and multiplication of immature male flowers of kolikuttu banana (AAB) variety ‘Agra’

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Shoot tip culture is the most common technique in *in-vitro* clonal propagation of banana. Male buds, immature hands and male flowers can also be used as explants for micropropagation. However, the plants produced using these types of explants may have variations, which can be used in banana improvement. Therefore, the present study was undertaken to develop a plant regeneration protocol for kolikuttu variety ‘Agra’ through male bud culture technique. In the present experiment, 2 different sizes (<10 mm and 10-20 mm) of male flowers of ‘Agra’ were cultured on 4 MS media combinations (1: MS+5 mg/l BAP+1mg/l NAA+1mg/l Ascorbic acid+150 mg/l CW+30g /l sucrose, 2: MS+8 mg/l BAP+1mg/l NAA+1mg/l Ascorbic acid+150 mg/l CW+30 g/l sucrose, 3: MS+5 mg/l BAP+1mg/l NAA+1mg/l Ascorbic acid+30 g/l sucrose, 4: MS+8 mg/l BAP+1mg/l NAA+1mg/l Ascorbic acid+30 g/l sucrose) and subcultured once in 4-6 weeks. Experiment was laid as CRD 2 factor factorial with 25 replicates. ANOVA and mean separation were performed for data analysis using SAS 9.1.3 software. Results showed that <10 mm hand size performed better than the larger explants for the growth of hands and formation of shoot like structures. The growth of explants cultured on medium supplemented with 8 mg/l BAP without coconut water was found to be better than the other media. The treatment of combination of <10 mm hand size and 8 mg/l BAP without coconut water formed significantly high numbers (1.52, 6.48 and 6.18) of white color bodies per explant in first, second and third subculture cycles respectively. However, medium supplemented with 5 mg/l BAP produced significantly high number of shoots like structures in third subculture. Although coconut water contains growth promoting substances, medium with coconut water and high level of BAP (8mg/l), showed negative results in all parameters observed. The experiment is being continued to regenerate plantlets from male flowers and to identify morphological variations through field screening.

Keywords: BAP, kolikuttu banana, coconut water and male bud culture

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