Comparison of Ploidy Level Screening Methods in Regenerants Derived from Anther Culture of Anthurium

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ABSTRACT

Anther culture was successfully developed in anthurium. The anther culture resulted in morphology and growth response variation of regenerants. Different morphological variations indicated different ploidy level. Screening a convenient, rapid and reliable indirect method in ploidy level determination expected gave high benefit in estimation of ploidy level of anthurium practically. Three different ploidy levels of regenerants derived from anther culture were used in the study. Five indirect methods of chloroplast number in a stomatal guard cell, stomatal length and width ratio, stomatal density, ratio of length and width of leaves, and microspore number per anther were compared to chromosome counting as a direct method. Simple regression correlation analysis was applied to know level and direction of correlation of two methods compared. Results of the study indicate that chloroplast number in a stomatal guard cell was the most convenient and reliable indirect method in determination of ploidy level of regenerants derived from anther culture of anthurium. While number of microspores per anther was the second best method for the same purpose. Both methods was highly correlated to anthurium ploidy level with *r = 0.945* and *0.813* (*p<0.01*), respectively. Practically application of the methods was faster than chromosome counting method. Higher number of chloroplast and microspore, higher anthurium ploidy level. Application other indirect methods were not suggested in anthurium.