

SUMMARY

DEVELOPMENT OF *Anthurium andreaum* Linden var. Tropical SEEDLINGS IN THREE *IN VITRO* CULTURE SYSTEMS

Anthurium is an ornamental plant with great importance in the market; in Mexico, in the central areas of the state of Veracruz, suitable edaphoclimatic conditions for its cultivation are found. *In vitro* culture represents an alternative for its propagation. Therefore, in this work, we evaluated the morphological and physiological response of anthurium seedlings propagated in three *in vitro* culture systems: semi-solid medium (SS), partial immersion (IP) and RITA® bioreactor. To rule out contamination, the seedlings were cultivated five days in liquid MS medium. Subsequently, seedlings with a size of 0.5 cm, three leaves and no roots were introduced in the three different systems. After 60 days of been cultured in the systems, the seedlings were analyzed morphologically (number and size of shoots, number of leaves and number and size of root) and physiologically (absorption of macro and micronutrients, content of chlorophyll, content of hormones and nutrient extraction). Data were analyzed with ANOVA and media comparison tests by Tukey using Minitab-19 for Windows. The highest statistical results in morphological analysis were observed in the IP and RITA® systems, which use liquid media. The highest results for chlorophyll content were shown in plant tissues resulted from the RITA® bioreactor. Similarly, the highest absorption of macronutrients N, K, Mg, S, P and Ca and micronutrients Cu, Fe, Zn and Mn was found when the RITA® bioreactor was used, only microelement B was statistically higher in the IP system. For hormonal content, the highest values of kinetin and abscisic acid were observed in the SS medium; while the content of indole acetic acid was higher in the RITA® bioreactor. The highest statistical results for nutritional abatement were for K, Mg, S, Zn and Mn, Ca in the bioreactor. In the IP system, the best results were given by S, P, Ca, NO₃. In both systems there were no statistical differences in the abatement of NH₄⁺ while for Fe y Cu there were no statistical differences for the different systems. According to the results obtained, the *in vitro* culture system with the best results for anthurium production was the RITA® bioreactor followed by the system in partial immersion. Which is explained by a best gas exchange, which favors the development of plants.

Key words: Anthurium, semisolid, partial immersion, RITA