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Study of the In Vitro Germination of Immature Embryos of Orange Trees (Citrus sinensis)

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Introduction and objectives: Oranges constitute the major part of the production of citrus fruit, which is the most important fruit group in international trade.The creation of new triploid hybrids via the rescue of immature embryos allows diversification of the varietal profile of orange trees. The objective of this study is to optimize the in vitro germination of immature embryos according to the chemical composition of four in vitro culture media in two varieties of orange trees (*Pineapple and Parson Brown).*

Methods: At the maturity stage, the fruit was harvested and the extracted seeds were classified according to their size. Only small or flat seeds were cultured in a base medium of Murashig and Tuker (MT) under sterile conditions. The different growth regulator concentrations were tested to obtain the best medium for seedling development: M1 (MT + 1 mg / l GA3), M2 (MT + 1mg / l Kenitin + 0.5 mg / l BAP + 0.1 mg / l ANA), M3 (MT + 25 mg / l adenine sulphate), M4 (MT + 0.5 mg / l Kenitin + 0.5 mg / l BAP + 1 mg / l GA3).

Results: For both Orange varieties *Pineapple* and *Parson Brown*, the germination rate is maximum in M3 medium respectively at percentages of 100% and 90%. varieties between 6 and 7 days. With respect to growth rate (mm / week), both varieties knew a variation in the four media. Similarly, the maximum acclimation rate in the M1 medium is 80% and 90% respectively for the *Pineapple* and *Parson Brown* varieties.

Conclusion: In general, the smaller the embryos, the more sensitive they are to the composition of the culture medium. It is therefore essential to optimize the components of the medium to promote their growth and their in vitro developments. Therefore, the medium M1 (MT + 1 mg / l GA3) remains the best to promote good germination in short time and a better acclimatizationrate.