ADVENTITIOUS ROOT CULTURE OF *Pfaffia glomerata* (SPRENG.): GROWTH CURVE AND DETERMINATION OF TOTAL SUGAR

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INTRODUCTION. The roots of *Pfaffia glomerata* are used in folk medicine as a tonic, aphrodisiac, and to treat gastric disturbance and are commercialized in Brazil as substitutes for the *Panax ginseng*. The development of biotechnological methods, as *in vitro* organ culture, represent an alternative to the problem of destructive harvest of medicinal plants and obtaining of substances of interest. The objective of this study was to determine the growth curve and concentration of total sugar of *P. glomerata* root cultured in liquid medium in a roller bottle system.

MATERIAL AND METHODS. Explant of *P. glomerata* was used to establishment of *in vitro* culture in solid medium MS (Murashige Skoog). After a period of one year subcultures of air part, the roots (0.0209 g) were cultured in 20 mL of MS liquid medium supplemented with indole butyric acid and sucrose, in darkness condition, into a roller bottle system. After 7 days, the roots were washed with water and lyophilized to obtain the dry weight (DW). The growth curves were plotted according to DW of roots were harvested weekly for up to 28 days. Then, the roots were subjected to an aqueous extraction process under reflux for five hours. The crude extract was lyophilized and total sugars were determined using spectrophotometry by Phenol-Sulfuric method (Dubois, 1956).

RESULTS AND DISCUSSION. It was observed that the time required to obtain the best root growth was between second and third weeks of cultivation (0.0406 g and 0.0390 g DW, respectively), just after, was observed decrease of growth. The maximum concentration of total sugar (53%) coincided with the end of the exponential growth phase.

CONCLUSIONS: These preliminary results can indicate that concentration of total sugar and growth are associated, since its concentration increase with the increase of biomass.

Keyword: Adventitious roots culture, *Pfaffia glomerata*, total sugar

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