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MORPHOLOGICAL EFFECTS OF MAGNETIC FIELD ON NEW GUINEA IMPATIENS EXPLANTS

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In the present study, effects of an external magnetic field (MF) on morphology of New Guinea Impatiens (*Impatiens x hawkeri)* were investigated under controlled (*in vitro*) condition. To investigate the magnetosensitivity of plants, strong homogeneous magnetic fields (75, 150 and 200 mT) were employed with exposure times of 10 and 60 min for seven days. It was found that fresh and dry weights of shoots treated by MF increased relative to control samples. The lengths of plantlets' shoot and root significantly increased compared to the control. In addition, it was observed that the shoot induction time and growth rate of root hairs increased after the magnetic field treatment. Notably, the most significant difference in growth was observed in samples treated by 200 mT magnetic intensities for 60 min. Thus, it is suggested to use low-frequency homogenous magnetic fields in order to increase the efficiency and decrease the time of plants rooting.

Keywords: New Guinea Impatiens, Magnetic Field, in vitro, Rooting, Shoot Induction, Dry and Fresh Weight