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In Vitro flowering of plantlets derived from protoplasts of orange jessamine

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The *in vitro* flowering of orange jessamine plantlets derived from protoplast was affected by the manipulation of plant growth regulators, sugar and light conditions. Protoplasts isolated from embryogenic callus of orange Jessamine were cultured in MT (Murashige and Tucker 1969) basal medium containing 5% sucrose supplemented with 0.0, 0.001, 0.01, 0.1 or 1.0 mg 1-1 BA and 0.6 M sorbitol. MT basal medium containing 5% sucrose and supplemented with 0.001 mg 1-1 BA was found to be a suitable medium for development of globular somatic embryos derived from protoplasts to form heart-shaped somatic embryos with cotyledon-like structures. The highest percentage (85 %) of flowering was achieved with plantlet on half-strength MT basal medium containing 5% sucrose and 0.001 $mg1^{-1}$ N^6-benzyladenine (BA) in light. Exposure to darkness for more than 3 weeks followed by re-exposure to light reduced flowering. Flowering required a 10-day exposure to naphthalene-acetic-acid (NAA), Photoperiod with 18 h and 79.4 µmol m^{-2} s^{-1} light intensity promoted *in vitro* flowering in high frequencies. The sucrose treatment affected the flower bud size distribution. There were about 12 flower buds per culture in the largest size category (>5 mm). Flower buds originating from plantlet derived from protoplasts developed into normal flowers. The traits and sequences result *in vitro* flowering system of this species can be used as an alternative procedure to breeding techniques.

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