Inducing Callus Formation from Leaf or Petiole Segments and Culture of Callus in Pelargonium

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INTRODUCTION

Pelargonium is an important source of perfume because of its strong fragrance.

The purpose of this study is to induce callus from the leaf or petiole segments of two taxa of *Pelargonium*, to examine the difference between the two taxa in the induction of callus, and to investigate the proliferation rate of callus during subculture.

MATERIALS AND METHOD

The two taxa, *P. inquinans* and *P.* 'Rouletta', were used as the source material. The leaf or petiole segments were cultured on Murashige and Skoog (MS) medium containing 3% sucrose, 2.5 g liter^{-1} Gellan Gum, 0.22 mg liter^{-1} NAA + 2.2 mg liter^{-1} BA (medium 1) or 0.2 mg liter^{-1} 2,4-D + 2 mg liter^{-1} 2ip (medium 2) at pH 5.6 to induce callus formation.

Young leaves with petioles, 3 to 6 nodes from the top, were collected and cleaned with running water, and then sterilized with 70% alcohol for 30 sec and 10% sodium hypochlorite for 15 min. Segments of leaf and petiole were cut into 5-mm lengths and placed on medium 1 or 2, in a vial (73 mm × 127 mm). The segments were cultured in an incubator (Nihonikakiki, EZ-022) under 16-h light (white fluorescent lamps), 130 μmol s^{-1} m^{-2} PPF(5000 lx), at 25C. Callus induced from the leaf or petiole segments was divided into about 5-mm squares and cultured on medium 2. Proliferation rates were obtained from the average of 22 replicates every 4th day by measuring callus size (length × breadth × height).

RESULTS

There was a difference between the two taxa in callus formation. The petiole segment produced more callus than the leaf segment in both taxa. Medium 2 (0.2 mg liter^{-1} 2.4-D + 2 mg liter^{-1} 2ip) induced better callus formation. The proliferation rate of callus with *P.* 'Rouletta' was about twice that of *P. inquinans*.