

In vitro Multiplication and Corm Production of *Freesia hybrida* 'Sunny Gold'

Jinjoo Bae¹, Jae-young Song¹, Woohyung Lee², Jung-ro Lee³ and Munsup Yoon^{3*}

¹Post-doc, ²Researcher, and ³Senior Researcher, National Agrobiodiversity Center, NAS, RDA, Korea

Freesia has been an important worldwide cut flower because of its fragrance, long vase life and the wide color range of the flower. The conventional propagation methods by seeds and corms have many disadvantages such as shorter inflorescences with fewer numbers of florets, a reduction in cut flower quality and the accumulation of plant viruses in corms by successive cultivation. Therefore, the conventional propagation systems in Freesia needs to be replaced with tissue cultures to overcome the disadvantages. This study explored an efficient multiplication protocol using the combination of plant growth regulators (PGRs) for developed cultivar 'Sunny Gold'. The combination between 6-benzylaminopurin (BA) and α -naphthalene acetic acid (NAA) did not produce new shoots but developed enlarged roots. BA only treatments and the combination between BA and kinetin treatments were effective on shoot multiplication. The highest average number of shoots was 5.3 in the presence of 3 mg/L BA and 0.5 mg/L kinetin. To produce corms and cormlets, proliferated shoots were subcultured on 1/2 Murashige and Skoog (MS) medium supplemented with 90 g/L sucrose, 1 g/L charcoal and 7 g/L plant agar and placed at 4°C in the dark for 6 months. The small size of corms and comlets were produced. The average number of regenerated comlets was 2.75 per shoot. The results showed that shoot multiplication is more efficient than cormlet regeneration for in vitro freesia proliferation.

Key words: Freesia, Multiplication, PGR, Cut flower. Corm production

[This study was carried out with the support of "Development and application of cryopreservation protocol for pear and freesia germplasm (Project No.PJ016811)", National Institute of Agricultural Sciences, Rural Development Administration, Republic of Korea.]

*(Corresponding author) msyoon63@korea.kr, Tel: +82-31-299-1822