

# APPLICATION OF A TEMPORARY IMMERSION SYSTEM FOR MICROPROPAGATION OF VIETNAMESE GINSENG (*Panax vietnamensis* Ha et Grushv.)

Nguyen Phuc Quan, Vu Duc Thanh

Nguyen Minh Ly, Dinh Xuan Tu

## Summary

TIS helps increase embryo efficiency, germination and prolonging buds of ginseng in micropropagation due to the ability to reasonably supply nutrient and oxygen demand for plants, the effect of air flow and environmental flow. It also helps increase the adaptation and differentiation of Vietnamese ginseng. Adjust the time and frequency of pumping medium to increase fresh biomass, reduce glass plants. For mass production of somatic embryos, embryogenic cell clumps were maintained in 1/2 strength SH liquid medium containing 1.0 mg/l NAA + 0.5 mg/l BA + 30 g sucrose. It is most high yielding protocol with an immersion regime of 3 min every 4 h in TIS. Highest germination rate of somatic embryos is 87.22% on 1/2 strength SH liquid medium supplemented with 5 mg/l GA<sub>3</sub>. Elevated concentration of sucrose in the SH liquid medium (40%) stimulated the root thickening of plantlets in TIS (3 min immersion every 6 h). The plantlets with small taproots developed into plants with well-developed taproots on 1/2 strength SH medium supplemented with 1 mg/l NAA + 0.5 mg/l BA + 40% sucrose+7.5 g/l agar.

**Keywords:** *Micro propagation, Temporary Immersion System, TIS, Vietnamese ginseng.*