

Effect of BAP concentration and salt strength of MS medium on *in vitro* shoot growth and multiplication of *Passiflora edulis* var. Horana Gold

S.A.D.L. Senanayake ^{1*}, T.D. Silva ¹

¹ Department of Plant Sciences, Faculty of Science, University of Colombo, Sri Lanka.

* devindee612@gmail.com.

A high-yielding passion fruit variety named *Passiflora edulis* var. Horana Gold was developed in Sri Lanka aiming to boost profitability in commercial cultivation. Testing the micropropagation of the new variety was intended to produce quality planting materials affordably.

In vitro shoot growth and multiplication are influenced by the presence of plant growth regulators and the salt strength of the medium. In this investigation, different concentrations (0.00, 3.00, 4.00, 5.00, 10.00 mg L⁻¹) of the cytokinin, 6-Benzylaminopurine (BAP) were employed on full strength Murashige and Skoog media (MS) and on half strength MS media (½ MS) to identify optimal conditions for shoot tip culture. A minimum of 15 replicate bottles per treatment, each containing four shoots, were maintained in a completely randomized design. After six weeks of incubation, shoot height, number of shoots and leaves per explant were obtained. The data was analyzed using Minitab Statistical Software (Version 21).

Shoot growth parameters significantly varied with BAP concentration and salt strength ($p \leq 0.05$). In terms of both mean shoot height (1.4 - 2.2 cm) and mean number of leaves per explant (1.3 - 4.5), shoots performed better on MS than on ½ MS (1.5 - 1.9 cm, 1.2 - 2.8). The interaction between BAP concentration and salt strength was not significant ($p > 0.05$) for the mean number of shoots per explant, although concentrations of 3.00, 4.00 and 5.00 mg L⁻¹ of BAP consistently resulted in significantly higher mean shoot numbers per explant on both MS (3.8 - 4.6) and ½ MS (3.0 - 3.5).

In summary, BAP concentrations 3.00, 4.00 and 5.00 mg L⁻¹ can be recommended for an optimum shoot multiplication of shoot tip culture of *P. edulis* on MS and ½ MS media to obtain cost-effective superior planting materials.

Key words: - BAP, MS, ½ MS, Shoot multiplication, Shoot growth