Optimizing MS Media and Assessing the Effect on Shoot Multiplication & Growth by Flurprimidol and IBA for *Lomandra Fluviatilis* 'ABU7' PBR

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Lomandra fluviatilis 'ABU7' PBR ('Matt rush') is an Australian native ornamental grass. It is the best among the recently introduced *Lomandra* series to the landscaping industry. However, compared to other *Lomandra* varieties, the multiplication rate of the plant in the currently utilized culture medium is below the productive level in commercial tissue culture. Therefore, in this study, improving the multiplication rate was attempted. The best 6-Benzylaminopurine (BAP) concentration was determined by culturing plants at 0, 0.1, 0.25, 0.35, 0.45, and 0.55 mg/L concentration levels. They were combined with four levels of other growth regulators; control, Flurprimidol 1 mg/L, Indole-3-butyric acid (IBA) 0.1 mg/L & Flurprimidol 1 mg/L + IBA 0.1 mg/L. Flurprimidol was used as a gibberellin inhibitor because in certain cases, gibberellin can inhibit the formation of shoots. The effect of Flurprimidol on *Lomandra fluviatilis* 'ABU7' PBR and the role of IBA in a shoot multiplication medium were also investigated in this study. Flurprimidol improves the shoot induction as well as root induction of 'Matt rush'. Additionally, it increases moisture accumulation inside the plant. Plant height was also controlled by Flurprimidol. It dwarfs the plant and produces a compact plant which is ideal for ornamental grasses. IBA plays no role in improving the shoot induction. However, it improves root induction when combined with Flurprimidol. It does not play a role in controlling plant height or moisture accumulation. All the parameters of the four levels of other growth regulators were significantly different ($P< 0.05$). The negative and positive impacts of both chemicals balanced-out when combined in a single treatment. Lower BAP concentrations combined with Flurprimidol + IBA could be recommended for Matt rush shoot production.

Keywords: BAP, Flurprimidol, IBA, Matt rush, Multiplication rate

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