

The Evaluation of Adaptability of Three Ever-green Perennial Herbaceous South Korea Native Plants under In-door Light Intensities

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Though there is an on-going need for the diversity of ornamental plants for in-door environment, their growth and stress adaptability in comparatively low light intensity condition require further studies for implementation. Here investigates the growth and chlorophyll fluorescence parameters of *Farfugium japonicum* (L.) Kitam, *Liriope muscari* (Decne.) L.H.Bailey and *Acorus gramineus* Aiton under several light intensities which were based on common in-door environment. The growth measurement of the plants included the quantity, length, width and SPAD value of the leaves. Calculated values of F_m/F_o , F_v/F_m , P_i_Abs , ETo/RC and DIo/RC were used as the parameters of the chlorophyll fluorescence under 10, 50, 100 and 200 PPFD ($\mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$) light intensities. In-door plants group was put in a closed room allowing no other light sources for 10 weeks and the control group was put in glass-greenhouse for the same period. The overall in-door growth of *L. muscari* was not significantly different in all light intensities compared to the control group and even showed the higher SPAD values. Also, an increasing tendency of P_i_Abs value under 10 to 100 PPFD was observed implying that *L. muscari* could adapt well to in-door environment. Measurement of *A. gramineus* growth mostly showed the highest values in the control group especially in the number of the leaves. Nevertheless, chlorophyll fluorescence parameters showed no significant value difference between in-door and the control groups and thus, *A. gramineus* might have possibility of successful adaptation to in-door environment. *F. japonicum* showed deficient growth in plant height and leaf length compared to the control but, it seemed to be able to sustain ornamental value under in-door light intensities. Furthermore, P_i_Abs and DIo/RC values were increased under in-door light conditions suggesting potential adaptability of *F. japonicum*.

Key words: PPFD, Chlorophyll fluorescence, P_i_Abs , DIo/RC , SPAD

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