

# Effect of Abiotic and Biotic Elicitors on Growth and Alkaloid Accumulation of *Lycoris chinensis* Seedlings

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Three-month-old seedlings of *Lycoris chinensis* were treated with biotic and abiotic elicitors: yeast elicitor (YE), methyl jasmonate (MJ), salicylic acid (SA), and sodium nitropruside as NO donator (NO). We have shown that the addition of MJ and NO promotes the accumulation of galanthamine in these seedlings. The effect of these elicitors on the growth of the seedlings, as well as on the amount of the alkaloids accumulated in the seedlings was studied. The results showed that, in general, high doses of MJ and SA had a negative effect on the growth of the seedlings, while appropriate doses of NO and YE had a positive effect on the growth of the seedlings. It was remarkable that the addition of MJ, NO, and YE can promote galanthamine accumulation in seedlings. The accumulation was higher in treatments at higher concentrations of NO (100  $\mu$ M), where the release of galanthamine was 1.72-fold higher than that of the control at the 10<sup>th</sup> day of culture. The highest values of lycorine were obtained in seedlings treated with YE at a concentration of 0.01 g/l and by the 10<sup>th</sup> day of culture; the level was 1.38 times of the control.

*Key words:* *Lycoris chinensis*, Galanthamine, Alkaloid Accumulation