

Study on Gamma Ray Irradiation to Induce *Lobelia nummularia* Lam. Mutations¹

Chi-Cheng Chen²

Summary

The explants of *Lobelia nummularia* Lam. grew well in MS medium without any plant growth regulator applied. BA induced shoot formation of *Lobelia nummularia* Lam. explants. Good quality explants were obtained in BA 5ppm medium after two subcultures. Five γ -ray irradiation doses (0, 20, 40, 60, 80Gy) were used to induce mutation on *Lobelia nummularia* Lam. tissue culture explants. All explants survived, even under 80Gy treatment. When explants treated with 40 or higher Gy, the shoot growth and root formation were inhibited. Growth as inhibited by γ -ray irradiation treatments, resulting in coral, no root and shoot formation. There were 15 branches leaf mutations in this experiment. The highest mutation rate was 2.3% in 40Gy treatment, follow by 1.4% 20Gy. Leaves exhibited with white spots, lacings and masses in mutants. The most stable and beautiful mutants exhibited mass variegated leaves, but they were weak and grew slowly.

Key words: *Lobelia nummularia* Lam., tissue culture, irradiation, induced mutation

1. Research article No. 204 of Hualien District Agricultural Research and Extension Station.

2. Assistant researcher of Lan-Yuan Branch Station, Hualien DARES.