

Santhita Tungkajiwangkoon 2009: Polyploid Induction in *Torenia* using Colchicine Tablets. Master of Science (Agriculture), Major Field: Horticulture, Department of Horticulture. Thesis Advisor: Associate Professor Thunya Taychasinpitak, M.S.
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The effects of *Torenia hybrida* (Hybrids of *Torenia concolor* x *Torenia fournieri*) and *Torenia* spp. using colchicine tablets were studied. Leaves were cut and soaked in 0 5 10 15 and 20 ppm of colchicine solution for 0 1 2 and 3 days. The results revealed that plant height ,width and numbers of branches were significantly decreased when colchicine concentration and soaking period was increased. Colchicine solution could induce some interesting changed on morphological characteristics : flower colors ,flower forms, flowers sizes, stems sizes, thickness and leaf size and colchicine solution could induce polyploidy of both plants. Crossing of *Torenia concolor* hybrids and *Torenia fournieri* (*Torenia hybrida*) produced four clones tetraploid ($2n = 4x = 36$) and one hexaploid ($2n = 6x = 54$). Six tetraploid clones of *Torenia* spp. ($2n = 4x = 36$) were selected. Both of plants stomata sizes and pollen grain sizes were larger than those of the controls. Pollen fertility of two cultivars were decreased.

Student's signature

Thesis Advisor's signature