

Author: [ADVANCED](#)Volume Page Keyword: 

[TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

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Variation of Germination Response to Temperature in Formosan Lily (*Lilium formosanum* Wall.) Collected from Different Latitudes and Elevations in Taiwan

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Abstract: Germination characteristics at different temperatures were examined in Formosan lily (*Lilium formosanum* Wall.) seeds collected at different latitudes (22° 46' - 24° 47' N) and elevations (50-3000 m) in Taiwan. Germination was sensitive to temperature and varied among the populations, especially at 5°C and 25°C. All tested populations germinated fastest at 18°C. At this temperature, it took 8-14 days for initiation of germination (G_{in}) and 10-19 days to reach 50% of final germination percentage (G_{50}). Days to G_{in} and G_{50} were 10-21 and 14-41, respectively, at 10°C, 42-82 and 51-136, respectively, at 5°C and 10-39 and 15-100, respectively, at 25°C. In the low elevation (50-880 m) populations, seeds from higher latitude populations germinated more rapidly at 5°C but more slowly at 25°C than those from a lower latitude. Furthermore, seeds from the lower latitude populations had significantly higher final germination percentages than those from the higher latitude populations at 25°C. Some germination characteristics of seeds from higher elevation habitats at the middle latitude were very similar to those from lower elevation habitats at the lower latitude despite of the difference in air temperature between the habitats. The eco-physiological germination characteristics of Formosan lily in response to temperatures were discussed in relation to the climatic conditions of each habitat.

Keywords: [Habitat](#), [Lilium formosanum](#), [Lily](#), [Precipitation](#), [Seed germination](#), [Temperature](#)

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