# Effect of different concentrations of potassium silicate, nano-silicon and calcium chloride on concentration of potassium, calcium and magnesium, chlorophyll content and number of florets of Asiatic lily cv. 'Brunello'

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## Abstract

Production of many cut flowers, such as lilium, is very common in Iran. Flower quality has special importance in lilium flower production process, and proper nutrition is one of the major effective factors. This research was conducted to investigate the effect of different concentrations of potassium silicate, nano-silicon and calcium chloride on concentration of potassium, calcium and magnesium, chlorophyll index and number of florets of Asiatic lily 'Brunello'. The experiment was carried out based on randomized complete blocks design with 9 treatments and 3 replications (each replication included 5 pots), in Educational/Research Greenhouses of Isfahan University of Technology, Isfahan, Iran. Treatments included drench of potassium silicate at three concentrations (25, 50 and 75 mg/L), spraying of 25 mg/L potassium silicate, spraying of calcium chloride at two concentrations (25 and 50 mg/L), spraying of nano-silicon at two concentrations (12.5 and 25 mg/L) and control (no treatment). Number of florets, chlorophyll index and concentrations of calcium, magnesium and potassium in stem and leaves were measured. Results showed significant differences between treatments in stem and leaf calcium and magnesium, leaf potassium, chlorophyll index at harvest time and number of florets. Drench of 25 mg/L potassium silicate had maximum number of florets per plant (5.27) and stem magnesium. Spraying 50 mg/L calcium chloride showed maximum leaf calcium, magnesium and potassium, respectively, with 4.38, 15.75 and 16.43 percent increase as compared to control. Spraying of 25 mg/L calcium chloride, with 38.9 percent increase as compared to control, had maximum stem calcium. Maximum chlorophyll index at harvesting time was related to spraying 25 mg/L potassium silicate. In general, if the goal is production of more florets, then drench of 25 mg/L potassium silicate is an appropriate treatment.

**Keywords:** Flower quality, Spraying of nutrients.



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