

## Abstract

The experiment was conducted to determine the effect of different concentrations of silicon as Si<sub>0</sub> (0 M), Si<sub>2</sub> (10<sup>-4</sup> M) and Si<sub>4</sub> (10<sup>-2</sup> M) on the growth, yield and nutritive value of *Vigna radiata* L. cv. NM-2006 under the saline stress of S<sub>0</sub> (control), S<sub>3</sub> (30 m M), S<sub>6</sub> (60 mM), S<sub>9</sub> (90 mM) and S<sub>12</sub> (120mM) NaCl. The vegetative and reproductive parameters i.e. plant height, number of flowers, chlorophyll content, rate of photosynthesis, rate of transpiration, fresh and dry weight of root and shoot, length of roots and shoot, number of pods, number of seeds, number of flowers, seed weight per plant, protein and carbohydrate content and soluble sugars were evaluated. Saline stress negatively trimmed down all these parameters and plants with application of silicon showed proficiently better growth and productivity in comparison to those plants which were not treated with silicon. The percentage increase in height of plant was 4.65%, 10.8%, 17.7%, 22% and 24% under Si<sub>2</sub> application while 6.7%, 15.1%, 26%, 31% and 38% increase was observed under higher concentration of silicon i.e. Si<sub>4</sub>. The percentage increase in protein content of seeds was 0.46%, 6.31%, 9.63%, 15.48% and 19.87% at Si<sub>2</sub> treatment and 1.01%, 9.77%, 12.54%, 36.88% and 38.89% at Si<sub>4</sub> level of silicon treatment under the saline stress of S<sub>0</sub>, S<sub>3</sub>, S<sub>6</sub>, S<sub>9</sub> and S<sub>12</sub> respectively. **It can be inferred that the exogenous application of silicon as foliar spray proved best at increasing level of salinity and considerably improved growth, yield and physiological parameters of *Vigna radiata* L. cv. NM-2006.**