Silicon Supply to Mother Plant Affects Growth of Runner and Production of Daughter Plants in Strawberry 'Maehyang' and 'Sulhyang'

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This study was conducted to investigate the effect of silicon (Si) supply to mother plants during a runner production season on the growth of runners and production of daughter plants in strawberry (Fragaria × ananassa) 'Maehyang' and 'Sulhyang'. Mother plants were prepared in April 2019, and transplanted into 10 cm pots. The Si was supplied at either 0, 50, or 100 mg·L⁻¹ Si using K₂SO₄ as the Si source for two months by drench irrigation. After the treatment, growth parameters such as plant height, crown diameter, chlorophyll (SPAD), runner length and number of daughter plants for the mother plants, and crown diameter, runner diameter and plant height for the 1st daughter plant were measured. During this study, the mean air temperature and relative humidity inside of the glasshouse were 28°C & 80%, respectively. Plant height and longest petiole length were higher in 'Maehyang' than 'Sulhyang'. Runner length in both cultivars was the greatest in the 100 mg·L⁻¹ Si treatment. Runner length and first-two internode length was shorter in 'Maehyang' than 'Sulhyang'. The number of daughter plants produced was not significantly affected by Si concentration in 'Sulhyang', although the number of runners per plant produced of both cultivars was the greatest in the 0 mg·L⁻¹ Si treatment. Crown diameter and growth of the 1st daughter plant were not significantly different by Si concentration in both cultivars. 'Sulhyang' produced the number of runners per plant and daughter plants per plant than 'Maehyang'. Therefore, Si supply to the mother plants was effective in the production of more number of daughter plants in 'Sulhyang', but less in 'Maehyang' strawberry. (This research was supported by Agrobio-Industry Technology Development Program, Ministry of Food, Agriculture, Forestry and Fisheries, Republic of Korea (Project No. 315004-5). Dong Il Kang, Jongtae Huh, and Yali Lee were Supported by a scholarship from the BK21 Plus Program, Ministry of Education, Republic of Korea.)

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