Benzyladenine and Gibberellin Affect Runner Formation in Strawberry ‘Sulhyang’ and ‘Maehyang’

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Runner formation is important in cultivated strawberry (Fragaria × ananassa Duch.) as the commercial success of this crop is due in part to its asexual propagation through runners. This study was conducted to investigate the effect of 6-benzyladenine (6-BA), gibberellin (GA3), and their combinations on runner formation in strawberry ‘Sulhyang’ and ‘Maehyang’. The strawberry plants were treated with 6-BA (0, 50, or 100 mg·L−1), GA3 (0, 50, or 100 mg·L−1), or their combinations (50 mg·L−1 6-BA + 50 mg·L−1 GA3, 50 mg·L−1 6-BA + 100 mg·L−1 GA3, 100 mg·L−1 6-BA + 50 mg·L−1 GA3, or 100 mg·L−1 6-BA + 100 mg·L−1 GA3) by foliar sprays for 3 times at a 10-day interval. The experiment was carried out in a greenhouse with 30/22°C day/night temperatures, an average light intensity of 460 µmol·m−2·s−1 PPFD coming from the sun, and natural photoperiod of 13 hours. The 6-BA increased number of runners and runner diameter, while it decreased runner length, length of first 2 internodes, plant height, and petiole length in both cultivars. On the contrary, GA3 increased runner length, length of first 2 internodes, plant height, and petiole length, while it decreased chlorophyll content in both cultivars. In conclusion, a combination of 100 mg·L−1 6-BA and 50 mg·L−1 GA3 was the best treatment to promote runner formation in this study. And these results provided guidance for efficient production and breeding of strawberries. (This study was carried out with support from the Korea Institute of Planning and Evaluation for Technology in Food, Agriculture, Forestry and Fisheries (Project No. 118078-2). Yali Li, Jiangtao Hu, Hao Wei, and Dong Il Kang were supported by a scholarship from the BK21 Plus Program, the Ministry of Education, Republic of Korea.)

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