

## Effect of Gibberellin acid on Mechanical and Morpho-physical properties of Seedless grapes

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### Abstract

Gibberellic acid, a bio-regulator commercially used for berry elongation in seedless grapes. The European grape species (*Vitis vinifera* L.) is characterized by easily breakable flesh and prone to cracking in high rainfall areas. The firmness of flesh is the major determinant factor for eating quality of table grapes and firmer flesh is usually preferred by the consumers. As the grape production sector under subtropical plains is handicapped by berry cracking due to pre-monsoon showers, the present investigation was carried at Division of Fruits and Horticultural Technology, IARI, New Delhi in 2017-18 for improving the textural properties of seedless grapes through pre-harvest application of gibberellic acid (GA<sub>3</sub>). Four different concentrations of GA<sub>3</sub> (20, 30, 40, 60 ppm) were applied at 20 days after full bloom stage. Five seedless grape varieties viz., Pusa Seedless, Perlette, Beauty Seedless, Pusa Trishar, and Pusa Aditi were taken for this study. The highest firmness value was obtained at 40 ppm GA<sub>3</sub> concentration in Pusa Aditi (5.35 N), Beauty Seedless (4.78 N), Perlette (4.13 N), Pusa Trishar (3.81 N) and Pusa Seedless (3.76 N). In cv. Pusa Seedless, the highest bunch weight (447.73 g), bunch length (21.13 cm), berry weight (1.78 g), berry length (1.58 cm) and berry diameter (1.28 cm) was obtained with 60 ppm GA<sub>3</sub>. In cv. Perlette, the highest bunch weight (447.23 g), bunch length (19.23 cm), berry weight (2.75 g), obtained with 40 ppm GA<sub>3</sub>, whereas maximum berry length (17.4 mm), and berry diameter (16.48 mm) was obtained with 60 ppm GA<sub>3</sub>. In cv. Beauty Seedless, the highest bunch weight (312.76 g), bunch length (16.22 cm), berry weight (3.47 g), berry length (17.49 mm), and berry diameter (14.04 mm) was obtained with 40 ppm GA<sub>3</sub>. In Pusa Trishar, the highest bunch weight (661.23 g), bunch length (27.34 cm), berry weight (3.45 g), berry length (17.68 mm), and berry diameter (16.33 mm) was obtained with 40 ppm GA<sub>3</sub>. In Pusa Aditi, the highest bunch weight (520.41 g), bunch length (24.62 cm), berry weight (4.31 g), berry length (21.95 mm), and berry diameter (19.14 mm) was obtained with 40 ppm GA<sub>3</sub>.

