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Inhibition of On-tree Fruit Softening of ‘Saijo’ Persimmon by Calcium Ion Treatment

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The influence of replacing Fe^{2+} with other divalent cations to inhibit ethylene production in fruit and on-tree fruit-softening of ‘Saijo’

investigated. When studying the effects of spraying treatment of fruit of NiCl_2 , CoCl_2 , and CuSO_4 solutions (2 days after ethephone treatment) on fruit softening induced by ethephone, it was determined that a NiCl_2 concentration of 1,000 ppm was most effective for inhibiting fruit softening. In studying the inhibitory effect of spraying NiCl_2 solution to prevent on-tree fruit softening, it was observed that treatment during early or mid-September or early October had an effect on inhibiting fruit softening and spraying had no effect after on-tree fruit softening had already occurred. However, by combining the serial application treatments in early September and again in early October, the ethylene concentration in one-in-three trees treated tended to show inhibition of on-tree fruit softening. The hardness of flesh receiving two treatments remained higher than that of trees receiving one treatment. While the possibility of inhibiting on-tree fruit softening by treatment with NiCl_2 was shown in this study, further investigation is necessary to clarify the mechanism of action and to replicate experiments in future years and on other trees.

Key Words: [ACC oxidase](#), [divalent cation](#), [ethylene](#)

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