

Effect of calcium and silicon fertilization after flowering on pineapple mineral status and flesh translucency

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Abstract	<p>Proper calcium fertilization can reduce flesh translucency, while silicon fertilization can enhance fruit quality and mineral content, mitigating physiological disorders. Therefore, this study investigated the effect of calcium and silicon fertilization after flowering on pineapple mineral status and flesh translucency. Treatments were, A (control: Without Ca and Si), B (Ca from ten weeks before harvest until harvest), C (Ca from six weeks before harvest until harvest), D (Si from ten weeks before harvest until harvest), E (Si from six weeks before harvest until harvest), F (Ca + Si from ten weeks before harvest until harvest), and G (Ca + Si from six weeks before harvest until harvest). Flesh translucency, fruit (Ca, K, Mg, B, and Si), and crown (Ca and Si) mineral content were determined. In the first trial, treatment E had the best performance, essentially it because increased the fruit mineral content (Ca:1843, K:16,346, and Si: 2140 mg kg⁻¹), respectively), and produced the lowest translucency incidence (5%). In the second trial, the best performance was observed in treatment B, having the lowest translucency incidence (5%), despite not increasing the fruit mineral content. A cell wall analysis proved that the high calcium and silicon ions assimilation was essential to reduce the translucency incidence (Ca:22.60 and Si:3.29 weight%, respectively). In conclusion, calcium and silicon fertilization after flowering can reduce translucency, impacting the fruit mineral status. More experiments should be done on calcium and silicon influences on fruit and crown physiology and their relation with translucency.</p>
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