

Preharvest multiple fungicide stroby sprays promote wound healing of harvested potato tubers by activating phenylpropanoid metabolism

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Abstract

Wound healing is an inherent property of harvested potato tubers. However natural healing process usually needs 2-4 weeks, which increased water loss and pathogen invasion. Therefore, it is necessary to develop a technology to accelerate wound healing processing. Stroby is a biogenic fungicide with induced resistance and it has not been reported whether it can improve the wound ability of potato tubers. Potato plants (cv. Longshu 7) were repeatedly sprayed with 0.4 g L⁻¹ (w/v) Stroby during tuber development, and the effect of preharvest stroby spraying treatment on wound healing in harvested potato tubers was evaluated in this study. The results showed that Stroby sprays reduced weight loss and disease index of harvested tubers inoculated with *Fusarium sulphureum*. Stroby-treated potato tubers also showed accelerated accumulation and increased thickness of the suberin polyphenolic, suberin polyaliphatic and lignin at wound sites of tubers. As the major substrates of suberin synthesis, cinnamic, caffeic, ferulic and *p*-coumaric acids were accelerated, and the content of total phenolics, flavonoids and lignin were increased along with increased activity of phenylalanine ammonia-lyase (PLA) at wound sites of harvested tubers. The results suggest that preharvest multiple sprays with Stroby on potato plants could accelerate wound healing of harvested tubers via activated phenylpropanoid pathway.