

Title Superficial scald, its etiology and control
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Abstract

Superficial scald is a physiological disorder causing brown or black patches on fruit skin that appears during or after storage on apples and pears. At least partial control of the disorder can be obtained from application of antioxidants, especially the commonly used diphenylamine (DPA), as well as low oxygen storage; scald development is assumed to be an oxidative process. However, the etiology and biochemistry that leads to its development are not completely understood. This is an overview of the evidence for and against the hypothesis that α -farnesene oxidation products cause the damage resulting in skin browning. It discusses the recent findings on the genes involved in α -farnesene synthesis and oxidation, and their induction or repression by abiotic stresses and ethylene. Methods of control of scald development other than antioxidants are reviewed, including recent developments in controlled atmospheres, ethylene inhibitors and stress treatments. In addition, recent research on the use of metabolic approaches to understand the changes occurring during the induction period for scald in the fruit is discussed.