

Title Current DPA and ethoxyquin situation and alternatives to superficial scald control in apples and pears

Author G. Calvo and E. Kupferman

Citation ISHS ActaHorticulturae 945:51-54. 2012.

Keyword superficial scald; DPA; ethoxyquin; low oxygen; 1-MCP

Abstract

Regulations governing the use of chemicals to control diseases and disorders of apples and pears in storage are becoming increasingly stringent, especially in European Union (EU) countries. The European Commission (EC) is currently conducting a review of the active ingredients (AI) of chemicals used in food production under EC Council Directive 91/414. DPA is under a review process and research is being conducted to address the concerns raised in the review. Ethoxyquin is also excluded from the list of AI in Annex I. Commercial supporters have recently come forward so this AI is also now under review. In light of the potential change in regulations, and the concern of fruit packers who market in EU, a survey of international researchers, suppliers and packers was conducted. The aim was to assess the situation in each fruit growing region, to determine which alternatives to antioxidants are being evaluated, gauge the perception about the acceptability of fruit treated with 1-methylcyclopropene (1-MCP) and learn how much packers of different regions are concerned about scald control. The respondents concerned about potential ban on antioxidants are from the countries that export to EU, especially from pear producing regions. Of all the alternatives mentioned by researchers consulted, the ones related to storage under controlled atmosphere (ultra-low oxygen, initial low oxygen stress, and dynamic controlled atmosphere) and 1-MCP are considered as the only sustainable technology to replace DPA. Other alternatives mentioned were ethylene removal, resistant cultivars, inhibition of phospholipase D and combined strategies. Regarding the use of 1-MCP, researchers report that it is a good alternative to current chemicals for control storage scald in apples. Although 1-MCP application to pears provides control of storage scald as well as the reduction in senescent scald, ripening may be inhibited after storage. Researchers are attempting to induce ripening in a number of ways including simultaneous application of 1-MCP and ethylene, conditioning through high temperatures, among others.