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EFFECT OF NAPHTHALENEACETIC ACID ON RESTORING 'ROCHA' PEAR RIPENING UNDER 1-MCP EVERGREEN EFFECT

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'Rocha' pear (*Pyrus communis* L. cv. Rocha), a DOP cultivar from the west region of Portugal, is quite appreciated worldwide due to its exceptional organoleptic quality. Because of its high exportation, preservation of this cultivar during long-term cold storage is of utmost importance, but remains a challenge for suppliers, especially after diphenylamine exclusion from the agricultural sector.

Since then, postharvest disorders have been prevented through the use of 1-methylcyclopropene (1-MCP). Nevertheless, this compound disrupts the normal ripening of fruit, affecting its eating quality and producer's sustainability. Consequently, there is the need for developing innovative solutions to recover 'Rocha' pear ripening capacity after 1-MCP application. Several strategies have been investigated to avoid the persistent blockage of ripening after 1-MCP as, for example, the application exogenous ethylene, the increase of temperature, but demand high energy consumption.

This study was designed to test the restorage of ripening via immersion of 1-MCP treated fruits in an auxin- 1-Naphthaleneacetic acid (1-NAA) solution. Fruit ripening as judged by ethylene evolution and respiration associated with color changes and softening, was accelerated by 1-NAA treatment compared to control (pear only treated with 1-MCP). 1-NAA treatment effect was evident through the firmness loss of the fruit (ca. 60%) and increased internal ethylene production (ca. 50%). Also, exogenous 1-NAA treatment increased 1-aminocyclopropane carboxylic acid and ACC oxidase activity corroborating the physiological results obtained.

The results provide information regarding how 1-MCP blockage may be circumvented, thus opening avenues for consistent ripening of 'Rocha' pear ensuring fruit quality and reducing postharvest losses.

Keywords: 1-Methylcyclopropene; 'ever-green' effect; Ripening recovery; Long-term storage; Naphthaleneacetic acid