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SELF-POLLINATION, CROSS-POLLINATION AND PARTHENO-CARPY IN 'ROCHA' PEAR

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Abstract:

The pollen pistil interaction in 'Rocha' pear was studied examining pollen tube growth in styles and the ovary. The growth rate of pollen tubes after self-pollination of 'Rocha' was compared with the growth rate of 'Passe Crassane' pollen tubes in 'Rocha' pistils. In the latter case, 'Passe Crassane' pollen tubes reached the ovules in three days, while after self-pollination most 'Rocha' pollen tubes germinated only until 2/3 of their style length. Only a few pollen tubes reached the ovules eight days after pollination. The slow rate of pollen tube growth in self-pollination of 'Rocha' pear may prevent fertilisation by loss of viability of embryo sacs. Embryo studies on controlled pollinations (self and cross-pollination) in the field revealed that the fruits obtained by self-pollination of 'Rocha' pear should be parthenocarpic. The embryos were not formed and the nucellus degenerated, although in some ovules the tissues corresponding to the teguments and nucellus had grown to some extent, producing unviable seed-like bodies.