

**Title** Effect of pollination on petal abscission in regal pelargonium  
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#### **Abstract**

Petal abscission during shipping is a significant problem in regal pelargoniums (*Pelargonium xdomesticum*). In this study, we investigated whether petal abscission is induced by self-pollination during shipping, and whether self-pollination is more likely when the distance between the stigma and anthers is small. Four cultivars were subjected to simulated transport (21 °C) with or without intentional pollination and the rate of petal abscission was evaluated after shipping. There was cultivar variation for petal abscission after shipping. Accidental pollination during shipping was strongly correlated with morphology of freshly opened flowers ( $r^2 = 0.9$ ), i.e. florets with small height difference between stigma and anther had a greater likelihood of pollination during shipping. However, petal abscission rates after intentional pollination were low, and petal abscission was not related to the rate of accidental pollination during shipping. Although 'Grand Slam' had highest rate of accidental pollination during shipping (50 to 96% depending on developmental stage), this was not associated with higher abscission rate after shipping. Regardless of cultivar, older florets showed higher abscission rate. It is concluded that accidental pollination during shipping is not an important factor regulating petal abscission in regal pelargoniums, but cultivar and developmental stage of florets are likely to be more important determinants of petal abscission.