Abstract:

Ethylene-induced petal abscission is a significant problem during commercial shipping and handling of Regal pelargonium (Pelargonium x domesticum). A genotype of Regal pelargonium was found which has exceptional production and postharvest characteristics. Individual floret longevity in this plant is about twice that of current commercial genotypes. Two progeny also displayed superior floral longevity. Although the three genotypes still respond to exogenous ethylene, they have significantly reduced rates of ethylene production and reduced ethylene responsiveness in comparison with the other genotypes evaluated. The newly bred genotypes exhibited dramatically prolonged whole plant longevity, and displayed more than twice the number of florets, compared with other evaluated genotypes. Floret longevity was strongly correlated with ethylene sensitivity (r2=0.93), but not with ethylene production. Therefore, reduced ethylene responsiveness is the most important determinant of enhanced postproduction performance in these superior genotypes.