

# Development of *Viola tricolor* flowers

T.P. Silva, L.S. Oliveira, F.L. Finger

Acta Horticulturae 1060: 97-101. (2015)

---

## Abstract

Heartsease is a common flower employed for landscaping, and used as edible flower for decoration of salads and dishes. Despite its economic importance, studies on behavior of respiration, ethylene production and carbohydrates during senescence have not been conducted yet. The flowers were harvested at the following stages of development: 1, closed bud showing the first color at the petals tip; 2, closed, bud showing the final color of the petals over the whole surface; 3, freshly open petals; 4, flower completely open; 5, flower with wilted petals. Respiration increased by 4.1-fold from stage 1, reaching a peak at stage 3, followed by a small drop up to the complete wilting of the petals. Ethylene production enhanced with the opening, reaching five-fold increase at stage 5. Regardless the stage of the flower development, reducing sugars (RS) were the minor nonstructural carbohydrates, even after an increase observed in senescent flowers. From stage 1 to 2, RS dropped by 20%, keeping steady afterwards. During flower opening and senescence, the content of non-reducing sugars fell by 46%. Starch accounted for 4% of total carbohydrate during the first four stages, showing 13% at stage 5. Ethylene seemed to be related with heartsease flower senescence, although the climacteric status of respiration and ethylene production remain to be further determined.