

**Title** Role of ethylene production and ethylene-associated genes in senescence of lotus flower  
**Author** Wachiraya Imsabai and Saichol Ketsa  
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#### **Abstract**

Lotus (*Nelumbo nucifera* 'Album Plenum') is one of commercial cut flowers in Thailand, but their vase life is rather short. Our objective of this research was to investigate of ethylene involved in lotus flower senescence. Lotus flowers held in distilled water had the most of water uptake on day 1 and decreased thereafter. Transpiration rate of lotus flowers was high during holding and their vase life was 3.6 days. Their respiration rate and ethylene production increased to a maximum at 12 h after harvest and decreased later. A partial cDNA encoding a 1-aminocyclopropane-1-carboxylic acid (ACC) synthase (Nn-ACS) and ACC oxidase (Nn-ACO) of lotus flowers with ongoing senescence were isolated. Nn-ACS and Nn-ACO mRNA abundance in lotus flower highly expressed coincidentally with the ethylene peak. The role of ethylene in senescence of lotus flowers will be discussed.