

Title Effect of gibberellic acid and silver thiosulfate on ethylene production, percent of opening florets and longevity of tuberose (*Polianthes tuberosa* cv. Double)

Author Mahmoud Shoor and Roh angiz naderi

Citation Abstracts of 27th International Horticultural Congress & Exhibition (IHC 2006), August 13-19, 2006, COEX (Convention & Exhibition), Seoul, Korea. 494 pages.

Keywords GA₃; silver thiosulfate; ethylene; Tuberose; longevity; opening florets

Abstract

A factorial study was carried out based on randomized complete block design with three replications in 2003 and 2004 in Mashad (Iran) in an attempt to increase longevity, percent floret opening (an important commercial consideration) and decreasing ethylene production in tuberose. Tuberose corms were soaked in 0, 50, 100 and 150 ppm concentrations of gibberellic acid (GA₃) for 24 hours then planted in outdoor conditions. After the appearance of inflorescences, they were picked and exposed to four levels of silver thiosulfate (0, 400, 800 and 1200 ppm) in cold storage (5°C). Gas chromatography (GC, PU 4400) was used to determine ethylene production. All characteristics studied were influenced by GA₃, STS and their interaction. GA₃ at 100 ppm produced the least ethylene and increased considerable preference rather to control. It also had a strong effect on those two characteristics GA₃ 150 ppm and STS at 800 ppm not only decreased ethylene production to 2.39 ppm, but also increased opening of florets up to 32.4% and longevity by up to 11.3 days. GA₃ decreased decomposition of RNA, protein and also delayed senescence. GA₃ also decreased the effect of the enzyme that converts S-adenosine methionine (SAM) to 1-aminocyclopropene 1-carboxylic (ACC) and reduced ethylene production. Therefore, it can be assumed that ethylene decreases the integrity of the tonoplast because it was reported that transformation of ethylene from vacuole to cytoplasmic membrane was decreased so this could be a reason for increasing longevity of tuberose.