Effects of cold storage length on physiological parameters of cultivars 'Clery' and 'Elsanta'

S. Musacchi, S. Serra, V. Ancarani, R. Wiedmer, A. Martinelli

Acta Horticulturae 1049: 989-994. (2014)

Abstract

Tray plants of the cultivars ‘Clery’ and ‘Elsanta’ have been cold stored. Four different levels of cold, at 2°C, have been tested: 500, 1,000, 1,500 and 2,700 h. After the storage, tray plants have been cultivated in a greenhouse. The plants have been monitored to evaluate how the amount of cold could affect their growth and production. A sample of all types of cold stored plants has been destroyed, to analyze the mineral composition and the reserve substances and to verify how cold storage influenced these contents in the different organs. It was possible to observe how the cold storage modifies the length of the first and second axis of the inflorescence. The average lengths of all inflorescence axes ranged between 3.5 to 6.7 cm. In all the treatments, except for the first 500 h in a cold chamber, differences in dry weight and in macro-and microelements content among amount of hours in the cold storage were also found. The fresh and dry weights of plants have been measured. The weight loss observed showed a reduction ranging from 4 to 4.8 times, respectively for ‘Elsanta’ and ‘Clery’. This means that samples of ‘Clery’ had a higher water content.