

Title Effect of ethephon and girdling on berry firmness during storage of 'Malaga Roja' grape
Authors B. Yahuaca, R. Martinez-Peniche, J.L. Reyes, E. Madero
Citation ISHS Acta Horticulturae 727:459-466. 2006.
Keywords ethephon; girdling; table grape; 'Red Malaga'; postharvest

Abstract

High temperatures prevalent in the north of Mexico during the development of the fruit cause red and black table grape cultivars to lack color. Some cultural practices, such as ethephon (ethylene generator) application and girdling, have been proposed to alleviate this problem. However, ethylene, being a senescence promoter, can produce softening and berry abscission at maturity and during storage. To determine firmness and the potential for storage of the berry, different concentrations of ethephon (0, 225, 335.5, 450 and 900 g ha⁻¹) and girdling were applied in a 18-year-old 'Red Malaga' vineyard established in San Pedro de las Colonias, Coahuila, Mexico. Main parameters evaluated, at ripening and during storage, were: firmness of intact berry, of skin and of pulp (Uys, 1996). Only the applications of ethephon at 900 g ha⁻¹ significantly reduced the firmness of the intact berry (13.6%), of the skin + flesh (24.9%) and of the flesh (26.5%), but did not affect either the skin or the fruit turgor, which suggests that main changes in firmness are located in the flesh. Firmness tests show that 'Red Malaga' is a relatively crisp berry. Firmness was reduced by storage in all the ethephon treatments, but mainly in that of the 225 g L⁻¹ treatment. Girdling reduced the firmness of the flesh by 9.1% at ripening, and during 80 days of storage. After that, no differences were observed. We conclude that ethephon at 900 g ha⁻¹ and girdling produce undesirable changes in the storage capacity of 'Red Malaga table grape', which are a function of the time of storage of the product.