

#### Abstract:

In subtropical regions, loss of quality in onion bulbs (*Allium cepa*) is of great concern. Postharvest losses can be as high as 40% of total production or more and are due essentially to germination, decay, rooting and weight loss. Preharvest as well as postharvest factors such as temperature, humidity, cultural practices and growth regulators have been shown to affect onion quality postharvest. In this work we investigated effect of foliar application of maleic hydrazide (MH) applied fifteen days prior to harvest at 0, 3000, 6000 and 9000 ppm on quality of 'Rouge d'Amposta' onions during storage for 6 months at 3 °C, ambient temperature in the dark, and in common horizontal silos made with loose-rock walls and straw. Dry matter content of the onions used was 7.6% at harvest with no significant effect of either MH, temperature or method of storage (silo vs ambient temperature). Weight loss was significantly reduced by cold temperatures, sprouting was inhibited by MH and cold temperature, decay was reduced by cold temperature and MH, rooting was reduced by MH but temperature effect was inconsistent. Aroma increased during storage with lower values at low temperature. After 6 months of storage, values of 72, 78 and 85  $\mu$  mol of thiosulfinate/g dry matter were recorded respectively for storage in cold temperature, ambient temperature and common storage in silos. MH had no consistent effect on aroma. MH residues in the bulbs did not vary during storage but were always highest (= 4.3-5.0 ppm) for 9000 ppm and lowest (= 0.4-0.7 ppm) for 3000 ppm. These results indicate that preharvest application of as little as 3000 ppm MH plus storage at 3 °C significantly improved the storability of low dry matter onions.