

Abstract

Chestnuts have a very short harvest period of a few weeks, but are in demand for many months through the cooler part of the year. During storage, losses due to development of black surface mould are a major problem. This research started with small scale laboratory trials and progressed to larger commercial storage. Besides determining the best conditions for storage, the research also involved development of a controller and storage technology through to a commercially applicable system (CALM Storage System). Research found that chestnuts stored very well with very little mould development under conditions of high carbon dioxide (>15%) and low oxygen (<5%). The storage system gave results as good as the best fungicide control, but without the use of any chemicals. Storage of nuts for up to 12 months in excellent condition, is now possible compared to the maximum of about 4 months, previously found to be the commercial storage limit. For the system to operate correctly, it is essential that the chestnuts are stored below 2 °C (-2 to 2°C), they are completely sealed in the plastic bags and base unit, that the CALM unit is maintained on power and operating within the range of 3.5 to 7 % oxygen at all times. The new CALM technology has several operator and produce safety features and it is well suited for usage in current chestnut growers operations.