

Abstract:

Brown heart is a tissue disorder found in Conference pears during CA storage. Differences in susceptibility for brown heart have been found between countries, orchards, harvest dates and storage conditions. One hypothesis is that brown heart is caused by increased internal CO₂. This research focussed on establishing internal CO₂ levels by measuring gas exchange rates and the resistance to gas diffusion. Different harvest dates, post-harvest treatments and storage periods have been compared with regard to respiration, fermentation and diffusion resistance and internal CO₂ concentration was estimated. Comparing less sensitive and sensitive pears showed the same maximum respiration rate and lower maximum fermentation rate but also more brown heart for the sensitive pears after storage. This indicates that internal CO₂ is not the primary cause of brown heart.