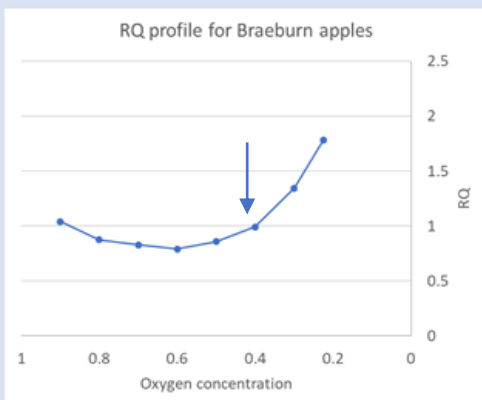


SafePod project 2017: findings relating to Braeburn

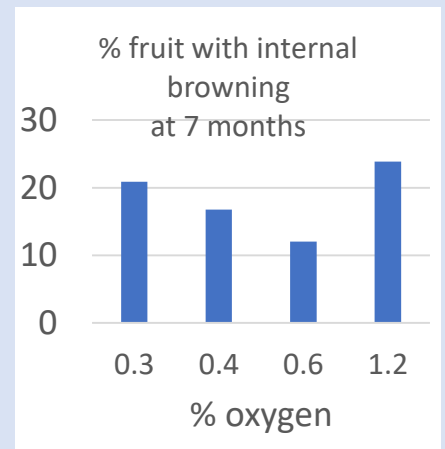
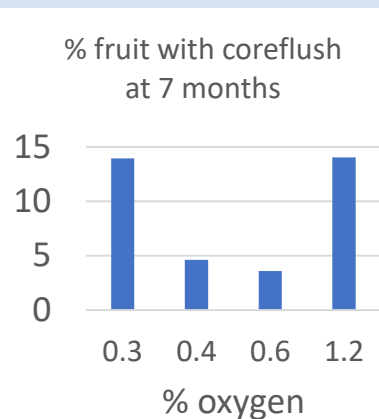
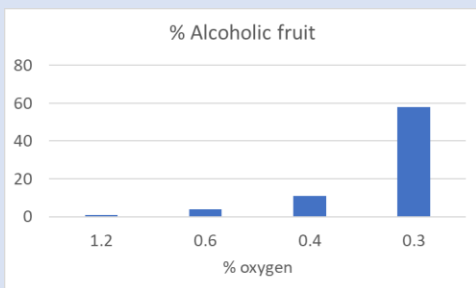


During the first two seasons of the SafePod project we have carried out trials of fruit samples stored in independent Pods located in the temperature controlled stores of the Jim Mount Building, Produce Quality Centre, while also monitoring the respiratory behaviour and storage quality of fruit in commercial stores.

The RQ response is used to optimise the oxygen concentration during storage

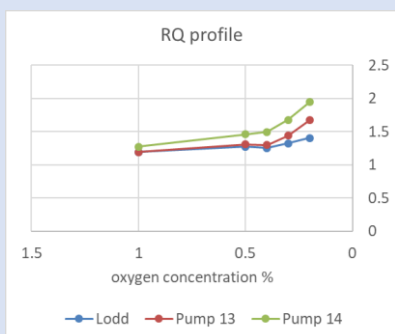


An increase in the RQ (respiratory quotient = CO_2 produced/ O_2 consumed) indicates that fruit is stressed. Braeburn apples typically react strongly at 0.4% O_2 . Below this concentration they produce significant levels of alcohol

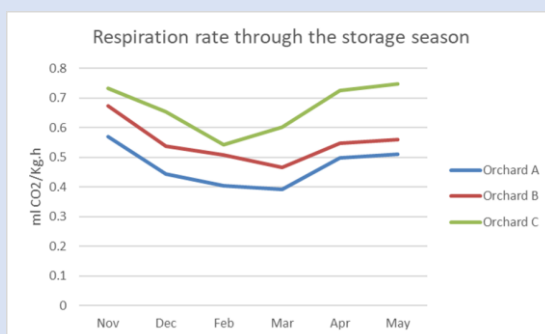


Data over the previous two seasons indicates that storing Braeburn 0.2% above this at 0.6% can provide advantages compared to the commercial practice of storing at 1.2%. At 0.6% the fruit retained higher firmness and exhibited less Core Flush and Senescent breakdown compared to standard commercial CA. However, lower oxygen concentrations (0.3%) result in a reduction in quality and also anaerobic respiration leading to ethanol production

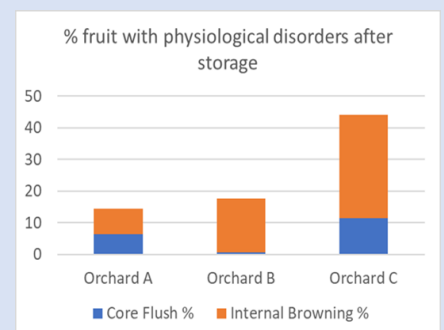
RQ response and respiration rates allow us to predict susceptibility to storage disorders



Fruit respiration changes through the storage season, and there is a clear difference between orchards.



Orchards A, B and C, tested at the PQC had very different respiratory behaviour. Orchard A had the lowest respiration rate, low RQ response and the least disorders after 7 months storage, while orchard C had higher respiration rates, higher RQ response and was more susceptible to disorders



During the third year of trials we will develop protocols to predict storage life of fruit consignments and will also use respiratory profiles to help us test CA establishment protocols.