Objectives and Rationale

Lenticel breakdown (LB) was highlighted as one of the most important defects in 2018, but is not yet well understood. Two approaches were suggested for management of this disorder: i) establish how pre- and ii) post-harvest factors influencing the vapour pressure deficit (VPD) influence LB incidence. This included a microscopic study to follow and quantify the lenticel development of individual fruit. In the current study we selected ‘Braeburn’ as model cultivar.

Methods

The evaluation of the development of lenticels in fruit in a susceptible ‘Braeburn’ orchard for LB incidence commenced in Nov 2019 in Elgin. Post-harvest treatments addressed manipulation of the VPD directly after harvest by application of wet blankets/not onto bins with a 0h and 24h delay before cooling, applying three different fan speeds, two storage temperatures, and packaging during re-cooling and relating this to LB. Fruit were sources from susceptible orchards in Ceres during 2018/19 (Die Eike) and 2019/2020 (Esperanto).

Key Results

During the first season, LB incidence was too low to draw conclusions, with a maximum incidence around 4% LB after shelf life. However, treatments indicated significant differences with regard to VPD in the different trials. Internal fruit quality was impacted differently by different treatments with significant differences following no clear trend – and primarily influenced fruit colour – in both seasons. LB incidence was higher during 2019/20 and evaluations were completed in August. Anatomical, LB and VPD data for 2019/20 is currently being analysed.

Conclusion and Discussion

The 2019/20 season seems to have been a more susceptible season for LB (personal observation). VPD analyses for 2018/19 indicated that most treatments provided sufficient contrasts to affect the incidence of LB during storage, if it is indeed the primary actor that determine LB incidence. However, a very low LB incidence was reported and this relationship still needs to be confirmed.