

In ‘Triunfo de Viena’ grown in high-altitude tropical regions, even when irrigation was greatly reduced to 25% ETc or completely stopped during the rapid fruit growth stage, fresh weight and diameter at harvest did not significantly decrease compared to 100% ETc (Bayona-Penagos et al., 2017).

### 3.2 Fruit firmness and texture characteristics

In Abbé Fetèl, deficit irrigation at 60% ETc significantly reduced shoot and leaf water potential as well as gas exchange, but did not consistently reduce firmness at harvest. Storage performance depended on rootstock type: on the more dwarfing SYDO, firmness was more affected by irrigation, while on BA29, reduced irrigation mainly increased soluble solids after 6 months of storage at 1 °C, with only slight fruit size reduction (Venturi et al., 2021).

At a more microscopic level, the effect of RDI on stone cells (a key factor determining the gritty texture of pear flesh) has also been studied. In potted ‘Williams’ (‘Bartlett’), RDI at about 15% of the control applied from 32 to 60 days after flowering (late stage I) showed, through microscopic image analysis, no significant differences in stone cell area, size, or spatial distribution between RDI and full irrigation at the end of stage I or at harvest (Peco et al., 2023) (Figure 1).

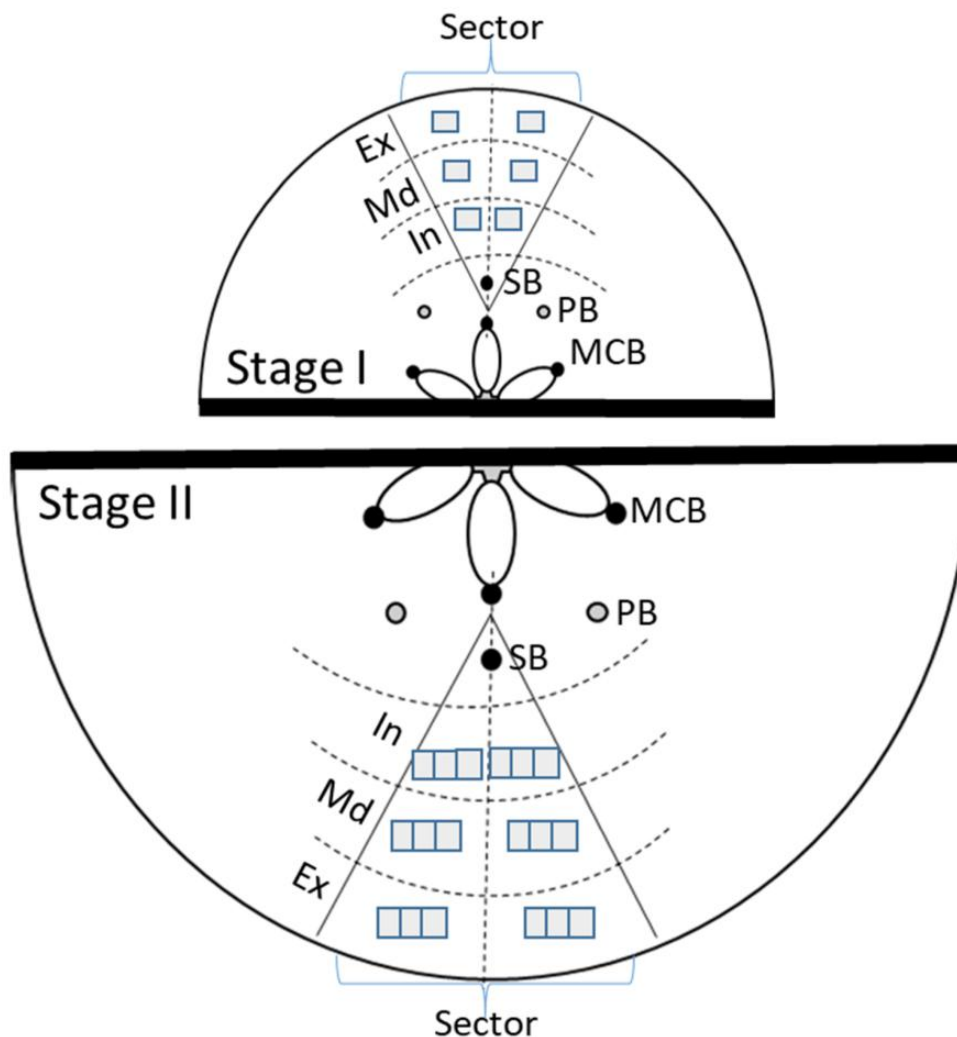


Figure 1 Scheme for the analysis of pear fruit cells in sections of Stages I (upper) and II (lower). Wedge-shaped sectors were cut from central transverse fruit slices, each extending from a sepal bundle (SB) to the fruit exterior, and processed for histological study. For measurements, the sector was visually divided into two halves and three concentrically oriented zones: Ex (Exterior), Md (Middle), and In (Interior). The squares within each zone represent the number of microscope image areas (0.06 cm<sup>2</sup>) captured and analyzed (two images per zone for Stage I; six per zone for Stage II). SB: sepal bundle, PB: petal bundle, and MCB: median carpelary bundle (Adopted from Peco et al., 2023)