

Dark-colored varieties usually have lower hue angle (h°) and higher contents of anthocyanins and phenolic compounds, while light-colored varieties show higher brightness (L^*) and chroma (C^*) (Hssaini et al., 2020). Changes in peel and pulp color are also among the most sensitive indicators of ripeness and are often used together with firmness to determine the optimal harvest time.



Figure 1 Photographs of the studied fig cultivars (Original, 2015) (Adopted from Mahmoudi et al., 2018)

3.2 Flesh quality (texture, juiciness, seed content)

The acceptance of fresh figs largely depends on their texture, especially flesh firmness and juiciness. Firmness is commonly used as an important indicator of harvest timing and maturity. Fruits harvested at a higher maturity stage (i.e., “tree-ripe”) are usually softer, but when firmness is still sufficient to withstand transport, they are more preferred by consumers.

Professional sensory evaluation usually includes firmness, juiciness, graininess, stickiness, and smoothness. These characteristics vary with cultivar and maturity level. Fruits that are not fully ripe usually show higher compression force and thicker skin, giving a firmer perception, sometimes accompanied by bitterness or astringency. In contrast, fruits at higher maturity are juicier and softer.

Seed content and the perception of achenes are also important factors. Sensory evaluation often scores seed presence and adhesion, as excessive seed content may negatively affect mouthfeel. Differences among varieties in pulp thickness and cavity size influence the pulp proportion and juiciness (Mahmoudi et al., 2018).

3.3 Flavor characteristics (sugar–acid ratio, aroma components)

Fig flavor results from the combined effects of sugars, organic acids, phenolic compounds, and volatile substances. Soluble solid content (SSC) and titratable acidity (TA) are commonly used indicators. The SSC:TA ratio (maturity index, MI) is closely related to perceived sweetness and overall acceptance (Pereira et al., 2020). Tree-ripe fruits usually have higher SSC and lower TA, and SSC is often more strongly correlated with consumer preference than TA.

Descriptive sensory studies show that different varieties have unique aroma profiles, which can be described by attributes such as “fruity,” “melon-like,” “berry-like,” “citrus-like,” and “honey-like” (King et al., 2012). Fruits