

The Role of Shoot Positioning in Premium Wine Grape Production

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WHAT IS SHOOT POSITIONING?

Shoot Positioning (also known as Tucking) is a critical component of vineyard canopy management. Tucking refers to the practice of training shoots upward, commonly used in Vertical Shoot Position (VSP) systems. By orienting shoots in a deliberate and uniform manner, growers can ensure:

- Even foliage distribution,
- Optimized sunlight interception and
- Reduced shading of the fruit.

Shoots are supported in an upright position using two or more pairs of catch wires, either fixed or movable, typically spaced 20 – 30 cm apart.

An open canopy supports optimal vine productivity and enhances fruit quality in the current season and can influence next year's yield. Adequate sunlight exposure promotes the formation of fruitful buds, directly impacting the potential of the following crop.

Method: New shoots are guided and secured between trellis wires to improve sunlight exposure and air circulation around the grape clusters.

Timing: The ideal time to position shoots is 1–2 weeks after bloom, before tendrils attach and while shoots are still flexible (Striegler & Jones, 2019). Waiting too long increases the risk of shoot breakage during the positioning process, which may result in more laterals growing than desired and impacting vine health and fruit quality.

Cultural Practice: Positioning is usually completed by hand, however there is specialized equipment available.

Number of Passes: Generally, two or three shoot positioning/tucking passes are required to provide optimal canopy management. Tucking is done progressively as shoots grow. This process must continue until the shoots extend beyond the top set of catch wires.



Figure 1: Before Shoot Positioning (Tucking)



Figure 2: After Shoot Positioning (Tucking)

BENEFITS OF SHOOT POSITIONING

Proper shoot positioning can result in:

- Reduced disease pressure due to increased air flow and reduced humidity around the leaves and fruit zone,
- Improved sunlight interception by the canopy which leads to reduced shading of the fruit and
- Easier utilization of mechanical hedging and leaf removal.

Overall, shoot positioning/tucking has a positive impact on vine and fruit quality through increasing sunlight exposure of leaves and shoots and improving airflow within the canopy.

These improvements help regulate vine temperature, which influences the development of sugars, acids and phenolics, which are key components of grape flavour composition. Additionally, better airflow aids in pest and disease control, particularly in tight-clustered cultivars that are more prone to rot and insect damage. Ultimately, shoot positioning is a necessary practice for quality wine grape production.