

# The Importance of Post-Harvest Irrigation and Fertilization

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Promoting Sustainable Winegrowing

**The period after harvest but before leaf fall is one of the best times of the season for the uptake of Nitrogen and Potassium.** This is encouragement to deliver these macronutrients after harvest when excessive growth and the Potassium content of the fruit is not a concern.

The amount of time required for vines to restore their carbohydrate and mineral reserves varies by cropload. Vineyards with a crop load of **2 to 4 tons per acre need very little time to recover** and restore after being harvested. Vineyards in the **4 to 8 tons per acre** range require about **a month for restoration**. Vineyards cropped above **8 tons per acre** need between **4 and 8 weeks** to build their reserves back up.

Replacing minerals is very important as they are transported off-site in the crop and not recycled back into the soil like leaves or canes. Every situation is different, but believable ranges are **3 to 5 lbs of Nitrogen, 5 to 8 lbs of Potassium, and 1 to 2 lbs of Calcium are removed from the vineyard** each year. Most of these nutrients are taken up by the vine during the post-harvest period if they are available.

When making fertilizer decisions, **a combination of soil analysis, tissue analysis, and visual assessment** is suggested. There are different schools of thought

regarding exactly when to sample and whether to analyze only the petioles or the whole leaf (petioles and the blades). Some growers take tissue samples only at bloom time; others take samples at both bloom and véraison. **The key is that sampling and analysis are done consistently year to year and are compared to previous fertilizations and outcomes.**

The vine needs stores of nitrates and Potassium along with carbohydrates to provide for the period of rapid shoot growth in the spring after bud break. Although common and often necessary, **Nitrogen and Potassium applications during the period from bud break to véraison run the risk of poor set, excessive shoot growth, and high pH juice at harvest.** The period between harvest and leaf fall is one of the two peak times for Nitrogen uptake. **Thirty-percent of the Nitrogen the vine will use in the next season is taken up post-harvest.** The same is true for Potassium, but the **uptake of Potassium** by the vine **decreases rapidly about a month after harvest.**

**Irrigations after harvest are important** for a number of reasons. **Soils need to be moist in order for nutrients to move** from the soil into the roots. Fertilizers applied without adequate soil moisture after the application will not be brought into the vine for storage and may leech away over the winter.



Young vines after harvesting.

Leaves need to be hydrated and able to transpire.

**Transpiration is necessary to move nutrients from the root-zone into the woody tissue of the plant.**

Additionally, it is important to have leaves that are photosynthesizing. Now that the demands of shoot growth and fruit development are no longer an issue, **the carbohydrates produced after harvest can go to storage.**

**Without water and fertilizer** at the end of the season there will be low levels of stored carbohydrates, low levels of the macronutrients that were removed, and dry woody tissue. These deficiencies lead to **uneven bud break, poor and uneven shoot growth, poor set, and a higher incidence of winter injury.**

Most growers rely on a combination of “hard numbers” from tissue analysis and the “feel” they have based on the way the vines look. Either way, **if the vines look good going into dormancy, they are going to look good coming out of dormancy** and have a solid start in the next growing season.

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