

Post Harvest Fruit Handling

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TEXAS A&M
AGRILIFE
EXTENSION

Factors influencing post harvest fruit quality

- ⊙ Type of harvesting
 - ⊙ Manual
 - ⊙ Mechanized
- ⊙ Temperature
- ⊙ Grape health
- ⊙ Time to processing
- ⊙ Storage

Factors influencing post harvest fruit quality

- ⦿ Time to processing
 - ⦿ Regular interval
 - ⦿ 0-4 hrs
 - ⦿ Extended interval
 - ⦿ >4 hrs
 - ⦿ For Texas >6 hrs is not uncommon

Regular Intervals

- ⦿ If harvesting manually
 - ⦿ Harvest early in the morning when t° is low
 - ⦿ Pick healthy grapes, or try to eliminate affected berries
 - ⦿ Harvest into buckets that have perforated bottoms (especially if it's raining)
 - ⦿ Transfer the grapes in small plastic crates
 - ⦿ Why small?

Regular Intervals

- ⦿ Keep grapes in shaded areas
- ⦿ Add SO₂
 - ⦿ At the bottom of bins as powder (pre-weighed plastic bags)
 - ⦿ Throughout bins as they fill out, as solution
 - ⦿ Adjust SO₂ amount based on temp and disease level
- ⦿ Transport to winery quickly
 - ⦿ Supplemental sorting?
- ⦿ Process according to your stylistic goals

Guidelines for SO₂ additions

Table 1 Possible examples of the variation in SO₂ additions (mg/L) with temperature (°C) and disease level

Disease level	SO ₂ additions (mg/L) at different temperatures		
	<15°C	15–25°C	>25 °C
Low	30	35	40
Medium	35	40	45
High	40	45	50

Extended Intervals

- ⦿ Direct transport after picking
- ⦿ Storage before transport

Extended – Direct Shipping

- ⦿ Mechanical harvesters
 - ⦿ Choose (if possible) the gentlest & cleanest option
 - ⦿ Choose the smallest containers you can
 - ⦿ Use dry ice to keep grapes cold
 - ⦿ Ice bombs
 - ⦿ Use refrigerated trucks

Extended – Direct Shipping

- ◉ Keep temperature as low as possible 0-2 ° C
- ◉ Use an antioxidant to prevent browning and microbial spoilage
 - ◉ Ideally a mixture of SO₂, ascorbic acid and sacrificial tannins
 - ◉ Do NOT use ascorbic acid alone!
 - ◉ Enartis AST
- ◉ Use ozone to fumigate the truck before shipping

Extended

- ⊙ Ozone fumigation
 - ⊙ As preventive treatment for transportation
 - ⊙ As substitute for SO₂ addition during storage AND vinification
- ⊙ Double effect
 1. it reduces the risk of unwanted microbiological activity (acetic acid bacteria, lactobacillus, Botrytis cinerea).
 2. It reduces the likelihood of wild fermentation during transportation even at relatively high temperatures

* It is also compatible with “organic” practices

Extended - Direct Shipping

- ⦿ Transport as fast as possible (and legal 😊)
- ⦿ At the winery – use sorting tables if extra sorting is needed
 - ⦿ MOGs
 - ⦿ Ladybeetles, other bugs
 - ⦿ Diseased berries
- ⦿ Process grapes

Extended – Storage before Shipping

- ⦿ Store grapes in a temperature controlled space (0-2 ° C)
- ⦿ Good air flow is recommended
- ⦿ Store grapes in small containers

Extended – Storage before Shipping

- ⦿ Fumigate the space with ozone
- ⦿ Use SO₂ impregnated paper sheets or liners
- ⦿ Use antimicrobial mix
- ⦿ Maintain moderate humidity

Thank you!

Questions?