

Chapter 3:
Equipment

Equipment

Carefully inspect all equipment prior to use to ensure proper functioning and integrity; look for cracks in airlocks and hoses, stains on processing equipment, and corroded metal surfaces.

Retire old equipment.

Do not purchase used equipment, esp. from unknown or unreliable sources.

Primary Fermenters

Used for vigorous phase of Alcoholic Fermentation.

Food-grade pails with lid

- Using 30-L (12-gal) pails for 23-L (6-gal) kits allow for volume expansion during fermentation, while minimizing risk of oxidation.

Primary Fermenters



Secondary Fermenters

Used for less vigorous phase of alcoholic fermentation, i.e. secondary AF, and for clearing when wine is more susceptible to oxidative and microbial spoilages.

23-L (6-gal) glass carboys

- Easy to clean and maintain
- Prone to breakage and injury

23-L (6-gal) PET carboys / Better Bottle

- Polyethylene polymer
- Lighter and safer alternative to soft glass
- More prone to scoring when using stainless steel or sharp edged implements

Secondary Fermenters



Secondary Fermenters

Oak barrels

- French (\$\$\$\$\$), American (\$\$\$), Hungarian (\$\$)
- Sizes vary from 3.8 to 225 L (1 to 60 gal)
- Only use new or used barrels of known provenance
- Must swell with water prior to initial use
- Expect wine loss due to evaporation and expansion / contraction during aging; depends on cellar temperature & humidity
- Require strict maintenance regimen to avoid wine and/or barrel spoilage
- Refer to manufacturers' instructions for additional guidelines
- Opportunity for value add / upsell to customer experience

Secondary Fermenters



Racking Equipment

Used to transfer wine from primary to secondary fermenter, or from one carboy to another following clarification.

Siphoning (food-grade) hose with flow-control clip

Plastic racking cane (J-Tube) with lees tip

Airlocks and Bungs

Closure used to protect wine from oxidation and ambient micro-organisms

Two types of airlocks (aka fermentation locks)

- Triple bubble
- 3-piece type

Bungs

- Only use food-grade rubber or silicone bungs
- Ensure correct size is used



Airlocks and Bungs

| Carboy Size | SKU # | Bung Size |
|-----------------------------|--------------|------------------|
| Glass Carboy 23L | 20799 | 6.5 |
| Glass Carboy 19L | 20803 | 6.5 |
| Glass Carboy 11.5L | 20801 | 6.5 |
| Better Bottle Plastic 11.5L | 28639 | 10 |
| Better Bottle Plastic 23L | 26983 | 10 |
| Plastic Carboy 23L | 24148 | 11 |
| Plastic Carboy 46L | 23895 | 11 |

Thermometer and Hydrometer

Thermometer

- For measuring correct must temperature prior and during fermentation.
- Standard, floating or laser

Hydrometer & Test Cylinder

- For measuring Specific Gravity (SG) and Potential Alcohol of juice and wine
- Important to measure samples at hydrometer calibration temperature; most are calibrated at 15.5 or 20.0°C (60 or 68°F)
- Triple scale is industry standard
- Used to ensure fermentation is complete prior to stabilization.
Please refer to instructions for target SG

Thermometer and Hydrometer



How to Use a Hydrometer

Clean and sanitize hydrometer and test cylinder

Ensure that test sample is clear of floating solids and CO² gas, otherwise, measurements can be skewed

To remove solids, filter sample through coffee paper filter

To remove CO², stir or shake sample vigorously

Ensure that the test sample is as close to the hydrometer calibration °T

Place hydrometer in test cylinder

How to Use a Hydrometer

Pour sample in test cylinder and close to the top

Spin hydrometer to remove air bubbles

Read SG & PA at bottom of meniscus

Return sample to batch

Rinse hydrometer and test cylinder with clean water and store away

Degassing Equipment

Used to reduce residual CO² to an imperceptible level; some small amount is still desired for freshness and to help volatize aromas, but there should be no prickly sensation on the tongue.

Each wine should be evaluated on a case by case basis to understand how much degassing needs to be done

Wine that has not been sufficiently degassed will not clear properly.



Degassing Equipment

Methods

Manual / spoon method

Stirring rod with flip paddles (e.g. Fizz X / Wine Whip)

- Use with electric drill

Vacuum Degassing

- Uses compressor, bigger compressor reduces degassing time

- Can degas multiple carboys and reduces labour

Useful Miscellaneous Equipment

Stirring spoon

Wine “thief” for sampling

Measuring spoons – ½ & 1 tsp, 1 tbsp

Measuring cup – min. 2-cup capacity

Small, medium & large funnels

Spray bottle for spraying equipment with sulphite solution

Carboy washer

Filtration Equipment

Used to remove suspended particulate matter from wine to obtain a crystal clear finish. Wines MUST be clear prior to filtering.

Filtering machines are a hot spot for bacterial contamination and proper cleaning process must be followed.

Buon Vino:

MiniJet (built-in pump)

- Uses 3 “square” filter pads; rated #1 (coarse or 5 μm) to #3 (fine or 0.5 μm)

SuperJet (built-in pump)

- Uses 3 square filter pads; rated #1 (coarse or 5 μm) to #3 (fine or 0.5 μm)

Filtration Equipment

Filter pads have a smooth side and a coarse side

- Follow manufacturer's instructions carefully
- Wine to be filtered must flow into the coarse side

Store filter pads in their original packaging or an air tight container

Filtration Equipment



Bottling Equipment

Bottle Washing / Sanitizing

- RJS recommends an automatic bottle washer where possible for academy stores to enhance customer experience
- Bottle washer / Sulphiter
- Modular bottle “tree” for draining cleaned/sanitized bottles

Bottle filler

- Wand with bottom valve (not recommended)
- Multiple-spout stainless steel models
- Enomatic models
- There are various sophisticated options in use.

Bottling Equipment



Bottling Equipment

Corker

- Avoid hand corker models
- Sturdy floor corker
- RJS recommends where possible to use electric air corks to enhance customer experience

Heating tunnel for shrinking PVC capsules

- Ensure CSA approved and implement safety process to minimize risks.

Bottling Equipment



Other Considerations

Ensure shelving is sturdy, food grade, and is used within weight limits

Carboy trolleys and lifting equipment are a great investment in health and safety.