

# Wine, Dry Red – Recipe for 20 gallons, SteveG revised 2016-Sep-1

This recipe is for using 3 boxes of juice (called “WineKit” on Amazon.com). Each box of juice produce ~6+ gallons of wine. This recipe will make about 100 bottles (750 ml) of wine.

I use a 100-quart stainless steel Stockpot as the primary fermenter, and 3 each 6-gal carboys as the secondary.  
<http://www.webstaurantstore.com/100-qt-heavy-duty-stainless-steel-stock-pot-with-cover/922SSPOT100.html>

## Initial Preparation

- All equipment used should have been properly cleaned and sanitized prior to beginning.
- Disinfect wine bottles with Star San solution. I use a 5-gal pail with a spigot and plastic tube as the reservoir. This tube makes filling the wine bottles much easier than other ways I have tried. Fill the wine bottles with this solution and let sit for 5 minutes or longer. Then dump the solution back into the reservoir for reuse. Rinse the bottle with clean water and let them dry on a drying rack. After drying they can be stored upside down in the original cardboard boxes lined with paper towels on the bottom.
- In the next three steps, use EXTREME CAUTION with the Sodium Metabisulphite solution. Make sure you have the gas mask, shown below, handy in case it is needed for an emergency spill. The sulfur dioxide can cause severe coughing if it gets in your lungs and can even kill you if there is improper ventilation.
- Siphon, carboys, pails, thermometers, hydrometers, paddles, mix-stirrer can all be disinfected using the Sodium Metabisulphite solution. Place all the small items in the pail, pour in about 2 cups of solution and cover the pail to keep the sulfur dioxide gas contained. The liquid does not need to contact all surfaces. It is the sulfur dioxide gas that does the disinfecting. When finished, take out the small items and rinse them with water and pour the Sodium Metabisulphite solution back into the original jug using a funnel.
- To disinfect the carboys, after they are thoroughly cleaned and rinsed, add about two cups of the Sodium Metabisulphite solution and cover the top of the carboy with saran wrap and rubber bands to contain the sulfur dioxide gas. Again, the liquid does not need to contact all surfaces. It is the sulfur dioxide gas that does the disinfecting. When finished, pour the Sodium Metabisulphite solution back into the original jug using a funnel.
- To disinfect the corks, thoroughly rinse them with water then place them in pail and add about 2 cups of Sodium Metabisulphite solution and cover the pail. Again, the liquid does not need to contact all surfaces. It is the sulfur dioxide gas that does the disinfecting. When finished, discard the Sodium Metabisulphite solution mixed with the corks (it gets contaminated from the corks) and rinse the corks in clean water several times, then place them on a towel to dry. After they are dry, store them in a plastic bag to keep them clean.

## Primary Fermentation (about 1 week, sometimes as long as 3 weeks)



- Room Temperature 70F (65F to 72F)
- Wipe out the clean 25-gal stainless steel stockpot with damp paper towels.
- Add ~10 gal drinking water ~70F to stockpot.

- Open 6 each 12-oz. packages of Dark Red Frozen Cherries. To remove freezer frost rinse in 3 changes drinking water, drain cherries in colander, then add to the stock pot.
- Add 3 each juice boxes to the stockpot. Removing the cap on the juice bags is often very difficult, so I just cut off the top of the bag with scissors.
- Add cane sugar. Start with 20 cups (1 gal plus 1 cup), fill the stock pot to the 20-gal mark with drinking water. As you add the drinking water monitor the temperature of the water. You are shooting for a final temperature of 70F in the mix (called the “Must”).
- Stir to dissolve the sugar and then check the specific gravity with the hydrometer. The hydrometer will tell you the “Brix” level (i.e. the % of sugar).
- During fermentation, all the sugar is converted to alcohol by the wine yeast. For dry red wine, you generally want 23 BRIX or a specific gravity of 1.096 (23% sugar). The yeast will convert all this sugar into 12.5% alcohol (Less sugar will yield less alcohol; more sugar will yield more alcohol). Add additional sugar one cup at a time until the hydrometer says 23 BRIX. It will likely require only one more cup.
- Next check the acidity with acid test kit. The acidity needs to be between 0.60 and 0.65 “% Tartaric”. So shoot for 0.63. If the acid is too low, add “Acid Blend”. If the acid is too high, add “Calcium Carbonate”. This is a matter of trial and error. Add, stir, then retest, then add, stir again and retest again, etc. until you get 0.63 % Tartaric.
- For most winekits, the acid is low, so it takes about 1 cup plus 3 Tablespoons of Acid Blend to get the acid level up to 0.63 % Tartaric.
- Add the 1 package of Yeast Nutrient and stir. If there was no Yeast Nutrient in the winekits, add 3 Tablespoons of Yeast Nutrient (bought separately).
- Add the 3 each Bentonite packs from the winekits and stir. If there was no Bentonite in the winekits, add 4.5 teaspoons of Bentonite (bought separately).
- Add 3 Tablespoons of Pure Vanilla Extract.
- Add 3 Tablespoons of Oak Chips.
- Pour the 3 packages of wine yeast on the surface of the must. Wait 10 minutes, then gently stir the wine yeast into the must. If no yeast came in the kit, use a non-GMO wine yeast like Lalvin K1-V1116 or some other yeast of your choice. The choice of yeast affects the taste of the final wine produced.
- Cover the stock pot and check it daily, mashing down the top to keep it any solids on the surface wet so they do not mold.
- After 7 days, check the specific gravity (sp.gr.) with the hydrometer. If it is below 1.010, then it is ready for the next step. In this step you want to time it so it is just below sp.gr. 1.010 and it is still fermenting and producing carbon dioxide. This way, when it is in the carboys the top of the carboys will fill with carbon dioxide and protect the wine against oxygen.
- If it is not below 1.010, then the fermentation is probably “stuck”. To remedy it, add some yeast nutrient and a yeast like Lalvin EC-1118. Once the sp.gr. is below 1.010, proceed to the next step.

## Secondary Fermentation (2 to 2.5 weeks)



- This step is simple. After the must has a sp.gr. below 1.010, use the siphon and transfer (“rack”) the must from the stockpot into the 3 carboys. Be careful not to disturb the sediment at the bottom of the stockpot. You do not want to siphon over the sediment. Leave about 5” of air space at the top of each carboy. Any extra should go into plain wine bottles.
- Cover the top of the carboys and wine bottles with saran wrap and a rubber bank and poke a pinhole in each to allow carbon dioxide to vent. I found this works best. The use of air locks is unnecessary and more trouble than it is worth.
- Now just wait. After **2 to 2.5 weeks**, check the sp.gr. it should be below 1.000. If it is not, wait until it is. After it is below 1.000, proceed to the next step

## Degassing and Clarifying (7 to 10 days for the wine to clear)



- Carefully siphon **one** carboy into the 12-Gal fermenting pail so can degas more easily. Do not disturb or transfer the sediment at the bottom of the carboy.
- If there were any wine bottles filled in the previous step, add these to the pail without disturbing or transferring the sediment.
- Rinse out the carboy until it is clean.
- Degas the must in the pail for a 10-minutes using the electric stirrer to drive off the carbon dioxide.
- Add the 1 package of “Stabilizer” from the winekits (or 1 teaspoon Potassium Metabisulphite), plus an additional ¼ teaspoon of Potassium Metabisulphite, and stir 2 minutes. This is to kill the yeast and preserve the wine during storage.
- Add the 1 package of Kieselsol from the wine kit, stir 1 minute (1 Tablespoon/6 gal, or ½ teasp/1 gal).
- Wait 30-60 minutes, then add 1 package of Chitosan from the winekits and stir 2 minutes (3 TBSP/6 gal, or 1.5 teasp/1 gal).
- Siphon (“rack”) into the cleaned carboy filling to within 2” of the top. If there is any extra transfer into wine bottles.
- Cover all bottles with saran wrap and rubber bands and poke a pinhole in the top of each.
- Repeat this procedure for the other two carboys.
- At the end of this period (**7 to 10 days**), the wine should be clear and is ready for bottling.

## Bottling



- Attach a Bottle filler to the tubing that is attached to the siphon. A bottle filler has a valve at the bottom of the filler that automatically starts and stops the flow of your wine when inserted or removed from the bottle. It makes bottling quicker and splash free. It attaches to the tubing coming from the siphon.
- Bottle the wine by syphoning from each carboy into the wine bottles and cork them with the previously sanitized corks.
- Place the shrink-wrap tops to cover the top of the bottle. Use a heat gun to shrink these into place.
- We place labels on the shrink wrap to identify the wine, but place no labels on the bottles themselves. This makes it easier to clean the bottles for reuse.
- Let bottles sit upright for 48+ hours to allow the cork to expand back.
- After the 48+ hours, lay the bottles sideways in a wine rack so the cork is kept moist (so cork does not dry out and crack allowing air into wine to ruin it).

## Alternate Methods

- After the 7 to 10 days clarifying step, some winemakers do another racking and second fining with Isinglass (1 oz/5 gal) which is said to improve mouth feel.
- Some winemakers rack the wine for several months to several years prior to bottling.
- Some winemakers clarify by repeated racking over several months instead of adding clarifying agents.
- Some winemakers blend low-sugar/high-acid grapes with high-sugar/low-acid grapes rather than add sugar or adjust acidity.
- Many winemakers experiment with different yeasts to get the best wine out of their grapes.

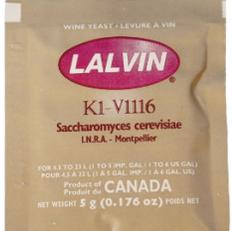
## Supplies:

			
Yeast Nutrient (\$10)	Bentonite, usually included in Winekit (\$3)	Pure Vanilla Extract (\$9)	Oak Chips (\$4)

		
1 each, 100-quart (25 gallon) Stainless Steel Stockpot (\$140)	3 each, 6-gallon glass carboys (\$40 each x 3 each = \$120)	1 each, 12-gallon plastic pail primary fermenter (for degassing stage) (\$40)

				
<p>Star San Sanitizer, for wine bottles (\$18)</p>	<p>Hand Paddle, to mix in sugar (\$6)</p>	<p>Acid testing Kit (\$10)</p>	<p>Stainless Steel Mix-Stir (\$34), to degass</p>	<p>Corker (\$75)</p>

				
<p>“Winekit” box of grape juice for winemaking, produces ~6 gal of wine, usually includes yeast, sulphite, clarifying agents, corks, shrink capsules, labels, and instructions (\$45 to \$125 per box)</p>	<p>Siphon and plastic tube, to siphon wine between containers (\$10)</p>	<p>Bottle Filler (\$3)</p>	<p>Hydrometer, to test the amount of sugar in the batch (\$9)</p>	<p>Thermometer, to check the temperature of the batch (\$9)</p>

			
<p>Wine Yeast, usually included in winekit, (\$1 x 3 each = \$3)</p>	<p>Kieselsol &amp; Chitosan dual pack, usually included in winekit (\$3 x 3 each = \$9)</p>	<p>#9 straight corks, usually included in winekit (\$16/100 pack)</p>	<p>Shrink Capsules, usually included in winekit (\$10/100 pack)</p>

			
<p>Sodium Metabisulphite solution, for disinfecting carboys, pails, and equipment. Use 2.75 Tablespoons Sodium Metabisulphite per one gallon of water. Disinfect for 30 minutes or longer. (\$30/lb)</p> <p><b>USE EXTREME CAUTION,</b> releases dangerous sulfur dioxide. Use in a well ventilated room. The sulfur dioxide given off by this solution is what does the disinfecting but it can make you cough severely and even kill you if there is not enough ventilation. <b>Get instructions on safe usage from your local wine making supplier.</b></p>	<p>Gas Mask from Home Depot that is rated for sulfur dioxide, in case of accidental spills of Sodium Metabisulphite solution. Keep this nearby for emergencies (\$30)</p>	<p>Potassium Metabisulphite, for killing yeast after secondary fermentation, usually included in winekit (\$9/lb)</p>	<p>5-gal pail with spigot and plastic tube for filling wine bottles with "Star San" Sanitizer. Use 1 oz. Star San per 5-gal water. Disinfect wine bottles for 5 minutes or longer. Then rinse with water and place bottles on drying rack. (\$12)</p>



	RC 212	ICV D-47	71B-1122	ICV K1V-1116	EC-1118
DRY WHITES	*	****	**	***	***
BLUSH OR R.S. WHITES	*	****	****	**	**
NOUVEAU	*	*	****	**	**
YOUNG REDS	****	*	****	**	**
AGED REDS	****	*	**	***	***
CHAMPAGNE BASE	*	*	*	**	****
SECONDARY FERMENT	*	*	*	*	****
STUCK FERMENTATIONS	*	*	*	***	****
LATE HARVEST	*	*	***	***	****
SENSORY EFFECT	E.V.C.	E.V.C.	ESTERS	NEUTRAL	NEUTRAL
TEMP. RANGE (CELCIUS)	20°- 30°	15°- 20°	15°- 30°	10°- 35°	10°- 30°
FERMENTATION SPEED	MODERATE	MODERATE	MODERATE	MODERATE	VERY FAST
ALCOHOL TOLERANCE (% /VOL.)	16%	14%	14%	18%	18%
NUTRITIONAL REQUIREMENTS	HIGH	LOW	LOW	LOW	LOW
**** STRONGEST RECOMMENDATION – E.V.C.: ENHANCES VARIETAL CHARACTER					

Wine Yeast, some of the varieties available (\$1 each)