

Residential Winemaking
GROW (GRanite Orchard Winery)

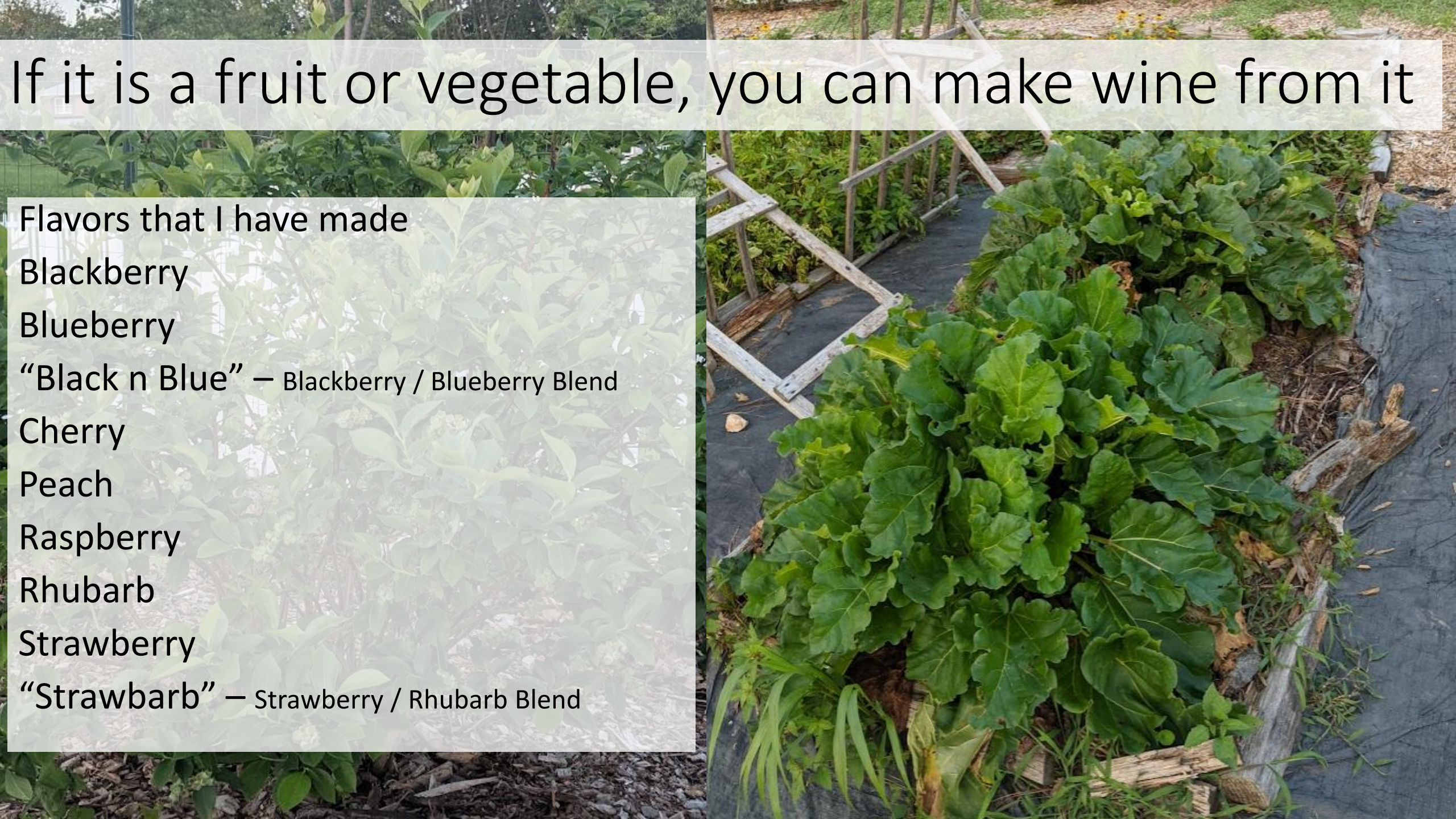
with Ken Jordan

Self Identified Non-Recovering Eccentric Gardener



Why make wine?

- You have an abundant supply of fruit
 - Home fruit trees, bushes, gardens
 - I call my wine a “byproduct” of the gardens
 - Know a good (can be secret) location for wild berries
- Doesn't take significant effort
 - Ala Ron Popeil “Set it and forget it”
- Thrifty – If you have the fruit, can be less than a dollar of ingredients to make a bottle of wine
- Unique party favors / gifts
- Flavors limited only by your imagination



If it is a fruit or vegetable, you can make wine from it

Flavors that I have made

Blackberry

Blueberry

“Black n Blue” — Blackberry / Blueberry Blend

Cherry

Peach

Raspberry

Rhubarb

Strawberry

“Strawbarb” — Strawberry / Rhubarb Blend

Picking Fruit

- Gallon ziplocks work well since 1 gallon of fruit is typically 3-4 lbs which makes 1 gallon of wine
- Freezing allows for picking at peak of flavor and breaks cell walls of fruit making juice more accessible
- If fruit is not ripe, wine will not have strong fruit flavor
- Seals well if picking wild berries
- Easy to make blended fruit flavors
- Store bought frozen fruit can be used if fresh fruit is not available
 - Ensure no preservatives are in fruit



- Approximate Initial Investment to make wine
 - \$141.39 for 1 gallon
 - \$234.21 for 5 gallon
- Cost for additional capacity
 - \$32.07 for 1 gallon
 - \$83.93 for 5 gallon
- Initial Price Per 750 mL Bottle (Includes Equipment)
 - \$28.28 for 1 gallon
 - \$9.37 for 5 gallon
- Follow on Price Per 750 mL Bottle (Buying Fruit)
 - \$2.63 for 1 gallon
 - \$2.37 for 5 gallon
- Follow on Price Per 750 mL Bottle (Free Fruit)
 - \$0.83 for 1 gallon
 - \$0.58 for 5 gallon
- 5 Gallon is cheaper since yeast packet can do 1 to 5 gallons
- ~25% of cost is cork which can be reduced in half by using 1.5 mL bottles

	1 Gallon		5 Gallon	
	Ingredients	Initial Investment	Ingredients	Initial Investment
Primary Fermentation				
Food Grade Pail		9.19		16.99
Food Grade Lid		3.79		9.99
Air Lock		1.00		1.00
Nylon Bag		3.09		5.95
Hydrometer		12.99		12.99
Fruit (Frozen 3lb Bag)	8.99	8.99	44.95	44.95
Acid Blend (1 lb)	0.29	9.29	1.45	9.29
Yeast Nutrient (1 lb)	0.11	6.99	0.55	6.99
Pectic Enzyme (1 lb)	0.15	11.99	0.75	11.99
Tannin (1 oz)	0.06	2.59	0.32	2.59
Yeast	1.49	1.49	1.49	1.49
Sugar	1.25	1.25	6.25	6.25
Campden Tablet (100 ct)	0.10	4.79	0.10	4.79
Secondary Fermentation				
Glass Carboy		15.00		50.00
Bottling				
Corks (100 ct)	0.70	13.95	3.49	13.95
Corker		35.00		35.00
750 mL Bottles Made	5		25	
Initial Purchase		141.39		234.21
Price Per Bottle (Initial)		28.28		9.37
Price Per Bottle (Follow On)	2.63		2.37	
Price Per Bottle (Follow On) Free Fruit	0.83		0.58	
Equipment Cost for additional capacity		32.07		83.93

• The Fine Print: All Costs Are Pretax

What to expect when you are expecting wine...

Primary
Fermentation
(2 Weeks)



Yeast is converting
sugars to alcohol

Secondary
Fermentation
(3-6 Months)



Settling out dead yeast
and fruit particles

Bottled
(0-12 Months)



“Aging” Process

Can enjoy alcohol after 2 weeks (with fresh yeasty flavor 😊)

Final product done in 3.5 – 18 months

Do not advise storing longer than 3 years to avoid off flavors unless using advanced techniques

Primary Fermentation (1 Gallon Strawberry Recipe)

Steps

Tips / Suggestions

Put 4 lbs of fruit in nylon bag in 1 gallon bucket

Dissolve 2 lbs of sugar in 3.5 quarts of boiling water and pour of fruit

Boiling sugar water helps sanitize from other natural yeasts

Leave at least an inch gap for foam from yeast to prevent spillover

Measure alcohol potential (PA)

(Initial PA) – (Final PA) = Wine Alcohol Percentage

Add 1 tsp acid blend (or 1 lemon)
1 tsp yeast nutrient
¼ tsp tannin
½ tsp pectic enzyme

If hot to touch, wait to add pectic enzyme since it can be broken down by heat

Pectic enzyme helps break down pectin (think jelly) to prevent haziness in wine

Add Yeast Packet (Montrachet or Champagne)

Put lid on container and install trap with Campden tablet solution

In a couple days, liquid will fizz like an opened soda bottle

Don't squeeze bag to reduce risk of fruit solids affecting flavor

Removing fruit helps reduce risk of off flavors

After 1 week, remove fruit

Higher PA = sweeter
Lower PA = dryer (0 or less)
Yes there is negative

Limit air in carboy to reduce risk of off flavors

After two weeks, fizzing should stop. Measure alcohol potential (PA). If below 1%, rack to carboy with trap

I track fruit type, start date of fermentation, yeast used, alcohol percentage and dryness

Mark on a label (or painters tape) the difference in PA measurements (this is wine's alcohol percentage)

Clean primary fermenter container and allow to dry completely before storing

Can make a little more than a gallon so extra left over after racking to carboy for "quality control"

Secondary Fermentation & Bottling (1 Gallon Strawberry Recipe)

Liquid starts opaque

Rerack after 1.5 months once liquid clears

Solids at bottom of carboy from fruit and yeast can leave off flavors

1.5 months later Siphon to bottles

Bottles can be reused

Darker bottles reduce light effect on wine flavor

Ensure bottles have been cleaned and sterilized with boiling water, dilute bleach, or Campden tablet

Rinse thoroughly if using bleach to sterilize

Ensure bottle have no mold or residual old wine in them

Fill to neck and slightly lower than cork to limit air in bottle

Install Cork

Soaking corks in warm water makes them more pliable and thus easier to install

Label bottles

I track fruit type, start date of fermentation, yeast used, alcohol percentage and dryness

I mark with painters tape since easy to remove

I mark upside down on neck since more visible

Store bottles for 0-12 months

Store bottles on side to keep corks hydrated to maintain a seal

Some wines (especially vegetable) start with off flavor but mellow with time

Store in location without significant temperature swings
(Basements)



750 ml bottles allow for more flavors to be tried when sharing / 1.5L bottles are less cost & effort

Troubleshooting

- Primary Fermentation

- Wine mash is bubbling out of trap
 - Remove some liquid from container
- Trap dries out
 - When yeast is active, Campden table solution can form bubbles that escape. Try straight water when mash is very active bubbling
- Wine mash is not fizzing
 - Yeast needs warm (>65F) temperature (Think bread yeast leavening better in warmth)
 - Too much sugar content in mash, dilute down
 - Proof / bloom yeast first in small cup of sugar water to ensure yeast is active
 - Starting at 15% alcohol, some yeasts will die. If trying to make higher percentages, use more tolerant yeast

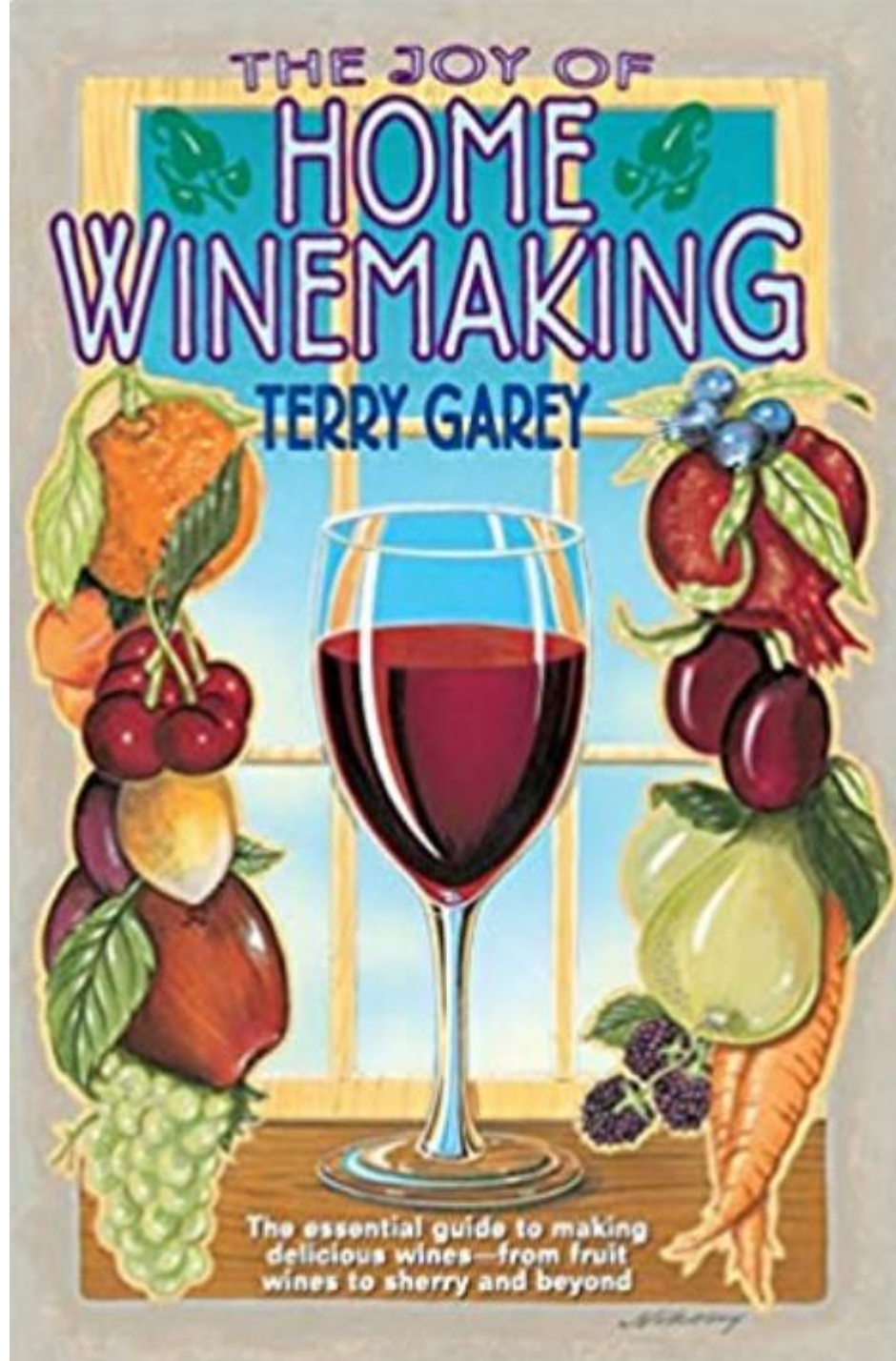
- Secondary Fermentation

- If bubbling too much, primary fermentation wasn't run long enough to get PA down

Keep notes of how each batch was made to determine process differences that have resulted in good or bad wine

Additional Suggested Reading

- “The Joy of Home Winemaking” by Terry Garey
- Suggested Equipment Supplier
 - Maryland Home Brew
 - <https://www.mdhb.com/index.php>
- Agriculture Extension Guides for Growing Fruit
 - University of Maryland
 - <https://extension.umd.edu/resources#!/category/3/subcategory/813>
 - Penn State
 - <https://extension.psu.edu/forage-and-food-crops/fruit>



The potential is now in your hands





KNOWING IS HALF THE BATTLE

(THE OTHER QUARTERS ARE FRUIT AND YEAST/NUTRIENTS)

