Establishing a Basement Winery: 
What You Need and Where to Get It

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Indiana Wine Grape Council
2007 Indiana Wine Growers Conference
Home Winemakers & The Law

• You must be 21 to make wine at home
• Household with 1 adult:
  – 100 gallons
• Household with 2 or more adults:
  – 200 gallons
• May be sent to competitions or tastings
• May not be sold or traded
• Wine may not be distilled to produce brandy

Title 27: Alcohol, Tobacco and Firearms
PART 24—WINE
Subpart C—Administrative and Miscellaneous Provisions
Tax Exempt Wine
Great Truths of Winemaking

- Yeast convert sugar to Carbon dioxide (gas) and alcohol (ethanol) = fermentation
- Commercial yeast make better wine
- Bad fruit = bad wine
- Cleanliness is next to Godliness
- Oxygen is wine's greatest enemy
- Wine bottled with more than 0.5% sugar = potential bomb
- Wine bottled without sulfur dioxide = premature aging
- Winemaking without good record keeping = frustration
The Amateur/Non-Commercial/Home Winery

• A place to be messy
  – no rugs, fabric curtains or furniture
• A place you can clean
  – no dirt floors, animals or toxic chemicals
• A place close by your life
• A place that keeps cool and steady temperature
• A place with good ventilation to prevent buildup of carbon dioxide
Hot & Cold Running Water

• > 180° F for sanitizing!
Glass Carboys & Air Locks

Bill McDonald, Ann Arbor, MI
Clean plastic *(white)* open top fermenter with lid *(trash can)*

Bill McDonald, Ann Arbor, MI
Clear Plastic Tubing

BUY FOOD GRADE ONLY!

Tygon: flexible, heat resistant, expensive

PVC: stiffer, heat tolerant, cheap

Chuck Craw, Lafayette, IN
Wine Bottles

Chuck Craw, Lafayette, IN
USED WINE BOTTLES

• Used bottles
  – soak in scalding hot water
  – clean with brush, no soap
  – rinse WELL with scalding water
  – allow to dry for several days
  – rinse with SO2 sanitizing solution before use

• New Bottles
  – rinse with SO2 sanitizing solution before use
CLOSURES
Corks, Screw Top, or Crown Caps

- Corks: Natural or Plastic
- Screw Caps
- Crown Caps
NO USED CORKS
MINIMUM LAB NEEDS

• Hydrometer & cylinder to measure sugar concentration

• Thermometer - NOT GLASS

• Liquid measure: milliliters, cups, gallons

• Balance: Kitchen scale

  - Tanita KD-160 Digital Kitchen Scale
    1 -500 gram range

  - Detecto PT mechanical dial scales
    ½ to 5 lb range
SANITIZERS & STAIN REMOVERS

• Sanitizers vs Sterilizers
• Counters, floors, wine equipment:
  – VERY Hot water & Oxyclean (de-stain)
  – No soap on wine equipment
• Wine bottles & fermentation vessels
  – VERY Hot water &
  – \( \text{SO}_2 \) Sanitizing solution:
    • 1-2 teaspoons (5 grams) KMS (Potassium metabisulfite)
    • 1 tablespoon Citric Acid
    • 3 gallons water (not hot)
BLEACH + MOLD = CORK TAINT
SULFUR DIOXIDE

“You can’t make good wine without SO2”
Benjamin Franklin, 1776

• Good Qualities
  – Anti-oxidant
  – Anti-bacterial
  – Bleach
  – Food grade chemical
  – Yeast produce small amounts
  – Active in acidic liquids

• Bad Qualities
  – Respiratory irritant
  – Corrosive
  – Very unstable, buy fresh each year, keep tightly sealed, dry
SOURCES OF SULFUR DIOXIDE

• Potassium Metabisulfite
  – Powder in a jar

• Campden Tablets
  – Compressed Potassium Metabisulfite, crush before using

• Oenosteryl Tablets
  – Contains potassium bicarbonate to fizz

• Fermenting Yeast
  – Not enough to preserve wine
  – Enough to require govt. warning
POTASSIUM SORBATE

Yeast Inhibitor – used at bottling with sweet wines

- **Good Qualities**
  - Stable, non-toxic, non-corrosive
  - Cheap, easy to use
  - Undetectable flavor, or slightly fruity/sweet
  - Will prevent refermentation

- **Bad Qualities**
  - Requires very clean wine, brilliant
  - Must be used with SO2
OTHER CHEMICALS

• Acids
  – Citric: to acidify sanitizing solution with SO2
  – Acid Blend (Tartaric & Malic): to enhance wine flavor

• Tannins
  – To help clarify wine
  – To enhance wine flavor

• Enzymes
  – To help extract juice from fresh fruit
YEAST

• Natural Yeast
  – Crushed grapes or juice will become wine
  – Unpredictable results
  – To prevent:
    • Chill – few weeks at 30F
    • SO2 – 50 to 100 PPM – few weeks if chilled
    • Heat – 180 F at least 3 minutes
COMMERCIAL YEAST

- Many different strains – all work well
- Purchase new yeast from big dealer every year
- Store refrigerated, well sealed bag
- Rehydrate as recommended
FRUIT

- Fresh grapes
- Frozen grapes or juice
- Pasteurized juice
- Concentrate

Butz Estate on harvest day
**RECORD KEEPING**

- Date & year
  - (vintage and production)
- Source of fruit & cost
- Analyses
- Wine “recipe”

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**LOT ORIGINATION RECORD - Easy Form**
(For musts needing less than 5% sugar addition and no water)

<table>
<thead>
<tr>
<th>Date Harvested:</th>
<th>Lot Number:</th>
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<tbody>
<tr>
<td>Date Received:</td>
<td>Remarks:</td>
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<tr>
<td>Lot Number:</td>
<td>Cultivar:</td>
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</table>

**WEIGHT/VOLUME MEASUREMENTS:**

- **Net Weight:** __________ lbs.  
- **Evenly ripened:** __________

**CONDITION OF FRUIT:**

- **Total Gallons:** __________ gal.  
- **Insect Damage:** __________
  (Red est. = Net wt. lbs x .09)
- **Gallons Fermented:** __________ gal.  
- **Disease:** __________  
- **(after settling/racking)**

**MUST ANALYSES:**

- **ºBrix** ________  
- **TA** __________  
- **pH** __________  

**After adjustment:**

- **ºBrix** ________  
- **TA** __________  
- **pH** __________

**TREATMENT:**

- **Crushed:** __________
- **Pressed:** __________
- **Must Storage:** __________

**AMELIORATION:**

- % Desired Alcohol X 1.85 = ________ ºBrix Desired
- ________ Brix Desired (-) ________ Starting Brix = ________ Brix Addition
  
  - Brix Addition (X) 0.096* (X) ________ Gallons of must = ________ Lbs sugar needed

* 0.096 lb sugar adds 1 brix to 1 gallon of must or wine

**Added** ________ yeast strain, rate of ________ gm. per gallon, date ________

Recommended yeast addition, 1 gram per gallon

**Remarks:**

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# RECORD KEEPING

- Fermentation record
- Aging details
- Bottling details
- Tasting notes

<table>
<thead>
<tr>
<th>Lot #</th>
<th>Date</th>
<th>Temp</th>
<th>Balling</th>
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**Finishing Treatments:**
- Bentonite __________________________ Date________
- Sparkoloid __________________________ Date________
- Other __________________________ Date________

Date into Cold Stabilization: ____________

**At Bottling:**
- SO² Addition: __________________________ Sorbate Addition: __________________________
- Acid Addition: __________________________ Sugar Addition: __________________________

Date Bottled: ____________ # of Bottles: ____________

**Bottle Analyses:**
- FSO₂: ____________ TSO₂: ____________ Ph: ____________ TA: ____________
- RES.SUGAR: ____________ ALCOHOL: ____________

**Tasting Notes:**
- Appearance: __________________________
Winery Start-Up: Sources of Information

If you are requesting information about the forms, paperwork and procedures for starting a winery, the following should be just what you are looking for.

You must secure your Alcohol and Tobacco Tax and Trade Bureau (TTB) permit before applying for your state permit. TTB Forms are available for download in Portable Document Format (PDF), can be filled-in online, and printed for your convenience, [www.ttb.gov/forms/index.htm](http://www.ttb.gov/forms/index.htm). Or call the TTB Cincinnati office at 1-877-882-3277 or 1-513-684-6124 to request the information and forms needed to apply for a bonded winery permit.
Download the complete set of federal regulations for wine production, a necessary reference for wineries to have on hand, [www.ttb.gov/rulesandregulations.htm](http://www.ttb.gov/rulesandregulations.htm).

Indiana information: [www.in.gov/atc/](http://www.in.gov/atc/)
The Indiana Winery permit forms are available for download, can be filled-in online, and printed for your convenience, [www.in.gov/atc/formsavailable.html](http://www.in.gov/atc/formsavailable.html). Or call the Indiana Alcohol & Tobacco Commission (ATC) at 1-317-232-2430 and speak with an Industrial Liaison to get the information and forms you need. Download the Indiana regulations dealing with Farm Winery/small wineries, [www.in.gov/legislative/ic/code/title7.1/ar3/ch12.html](http://www.in.gov/legislative/ic/code/title7.1/ar3/ch12.html). For the Indiana regulations dealing with alcoholic beverages, [www.in.gov/legislative/ic/code/title7.1/](http://www.in.gov/legislative/ic/code/title7.1/).

Books:
*Winemaking: From Grape Growing to Marketplace*
This book is a definitive review designed to embrace the entire scope of wine culture, an essential guide book for current and prospective vintners.
17th INDY INTERNATIONAL WINE COMPETITION
July 26-28, 2007
www.indianawines.org