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Wine & Beverage Management
HMGT 2402
Spring 2017
Viticulture & Vinification



Overview

- Attendance
- Questions about Syllabus
- Questions about OpenLab
- Review of Assignments
- Lecture Topic
 - Viticulture and Vinification

Factors Affecting the Taste of Wine

- Grape Variety
- Viticulture
- Soil
- Physical Location
- Climate
- Vinification
- Luck of the Year

The Grape The most important factor influencing the taste of wine.

•Genus

Species

Variety



The Grape



Skin: Pigment,

Tannin, Yeast

Water

Sugar

Acids & minerals

Seed

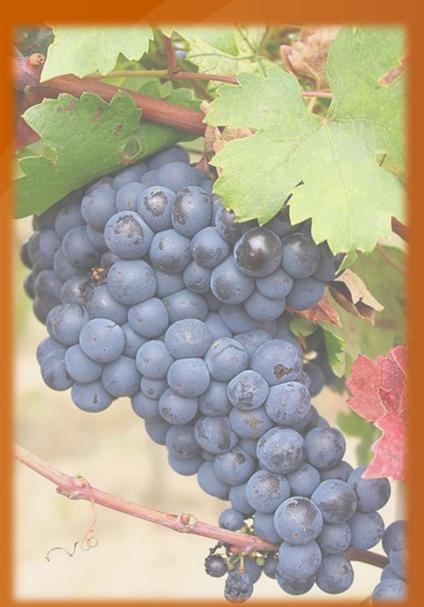
Wine

Water 80-85%

Alcohol 9-17%

Acids 0.4-1%

Sugar 0.1-1%

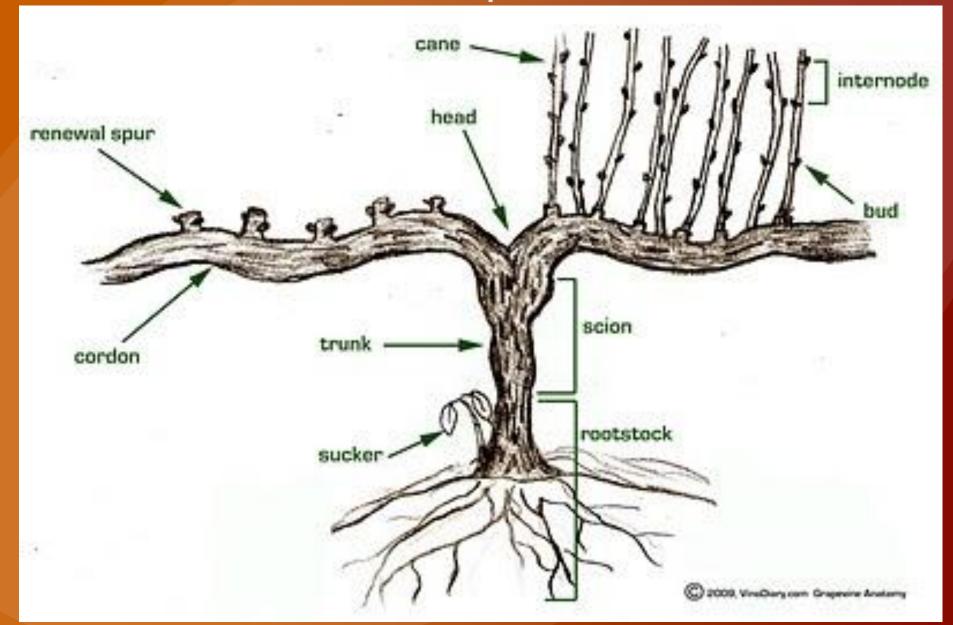




Viticulture

- The science of growing grapes
- Vineyard Management
 - Pruning, Trellising, Canopy, Irrigation, Harvest...
 - Life Cycle of The Vine
 - Decisions of Environmental Stewardship
 - Conventional, Sustainable, Organic, Biodynamic
 - Mike Benziger of Benziger Winery Discusses Organic and Biodynamic Viticulture

The Grape Vine

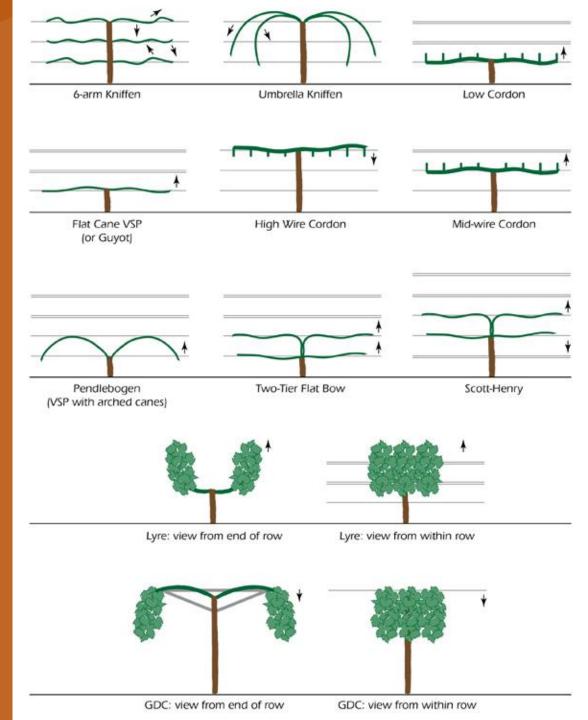


Sample Training Systems

What influences a vineyard manager's decision when choosing how to train a vine?

Pool, R. and J. Vanden Heuvel. (2001). Training systems for New York vineyards. *Cornell*. Retrieved from

http://www.fruit.cornell.edu/grape/pool/training.



htm

The Annual Life Cycle of a Vine

- Dormant
- ■Bud-break → Leaf and Shoot Growth
- ●Flowering → Veraison/Ripening
- Maturity
- Harvest
- Dormancy

Find a video here which shows the life cycle of a vine

The Soil

- Examples:
 - Chalk, Sandy, Gavel, Flint, Limestone, Sandstone
- General size (small to large):
 - Clay
 - Silt
 - Sand
 - Rock and stone
- General Characteristics
 - Heat retention, Fertility, minerality, drainage

Physical Location

- Latitude
- Elevation
- Aspect
- Proximity to water

The Climate & The Weather

- Continental vs.Maritime
- Average temperature over a year
- Likeliness of Fog During a Season
- Average % of Sunlight

- Actual Temperature
- Actual Rain Fall
- Actual Fog/Cloud Cover/Sunlight

Oenology:

The scientific study of wine & winemaking

- Vinification: the process of making wine
 - Harvest → Sorting
 - Fermentation
 - Yeast stains, oak vs. stainless steal, arrest fermentation
 - Blending
 - Mixing of various grape varieties of different lots
 - Fining & Filtering
 - Aging
 - On wood, in bottle, how long

Harvest: Mechanical



Harvest: Manual



Wine Casks



Wine Casks

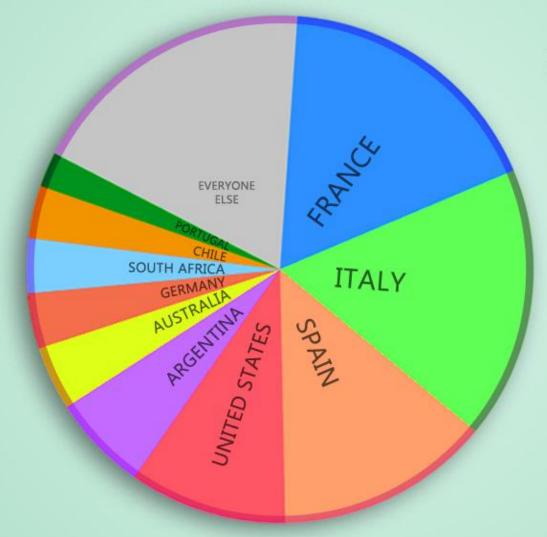


Gallo Wine Production Facility



TOP WINE REGIONS OF THE WORLD'

- 1 FRANCE
- 2 ITALY
- 3 SPAIN
- 4 UNITED STATES
- 5 ARGENTINA
- 6 AUSTRALIA
- 7 GERMANY
- 8 SOUTH AFRICA
- 9 CHILE
- 10 PORTUGAL



TOTAL PRODUCTION
35.1 BILLION BOTTLES





Common Regulations & Laws

- Appellations
- Grape Variety
- Minimum Alcohol
- Maximum Yield
- Methods of Viticulture
- Methods of Vinification

Short List of Problems Grape Vines Face

- Phylloxera
- Glassy Winged Sharpshooter

What is Phylloxera?



- Grape Louse that feeds on the roots of vitis vinifera and injects its waste into the roots
- Thought to be Resistant to Rootstock AxR1
- Did it Destroyed Wine Industry????
 - 70% of French Vineyards in 1860's-1870's
 - New Zealand in 1970's
 - Napa Valley in 1983
 - West Coast of US by 1995
- Various vitis labrusca root stocks now used

Terms to Know

- Viticulture
- Oenology (alt. spelling Enology)
- Wine Maker, Vitner, Vineyard Manager, Grape Grower
- Botrytis Cinerea (Noble Rot)
- Must
- Chaptalization
- Acidification
- Brix and Beaume
- Carbonic Maceration
- Fining and Filtration

- Racking
- Malolactic Fermentation
- Vintage
- Phylloxera
- Appellation
- Yield
- Formula for fermentation
- Cap, punching down the cap
- Barrique
- Vitis vinifera/labrusca
- Grafting
- Root stock/bud wood

Until we meet again

- Join the OpenLab and our course site.
- Read: MacNeil, Pages 3-52, 101-114 and 130-135