

A close-up photograph of a hand holding a bunch of ripe, blue grapes. The grapes are clustered together and have a natural bloom. The background is a soft, out-of-focus light color.

Prof. Karen Goodlad, CSW
Wine & Beverage Management

HMGT 2402

Spring 2017

Viticulture & Vinification



**NEW YORK CITY
COLLEGE OF
TECHNOLOGY**

Overview

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

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
 -
- Subspecies
 -
- Clones, mutation, cross, hybrid



Components of Wine

Grape

Skin: Pigment,
Tannin, Yeast
Water, Sugar, Acids,
Minerals, Seed

Wine

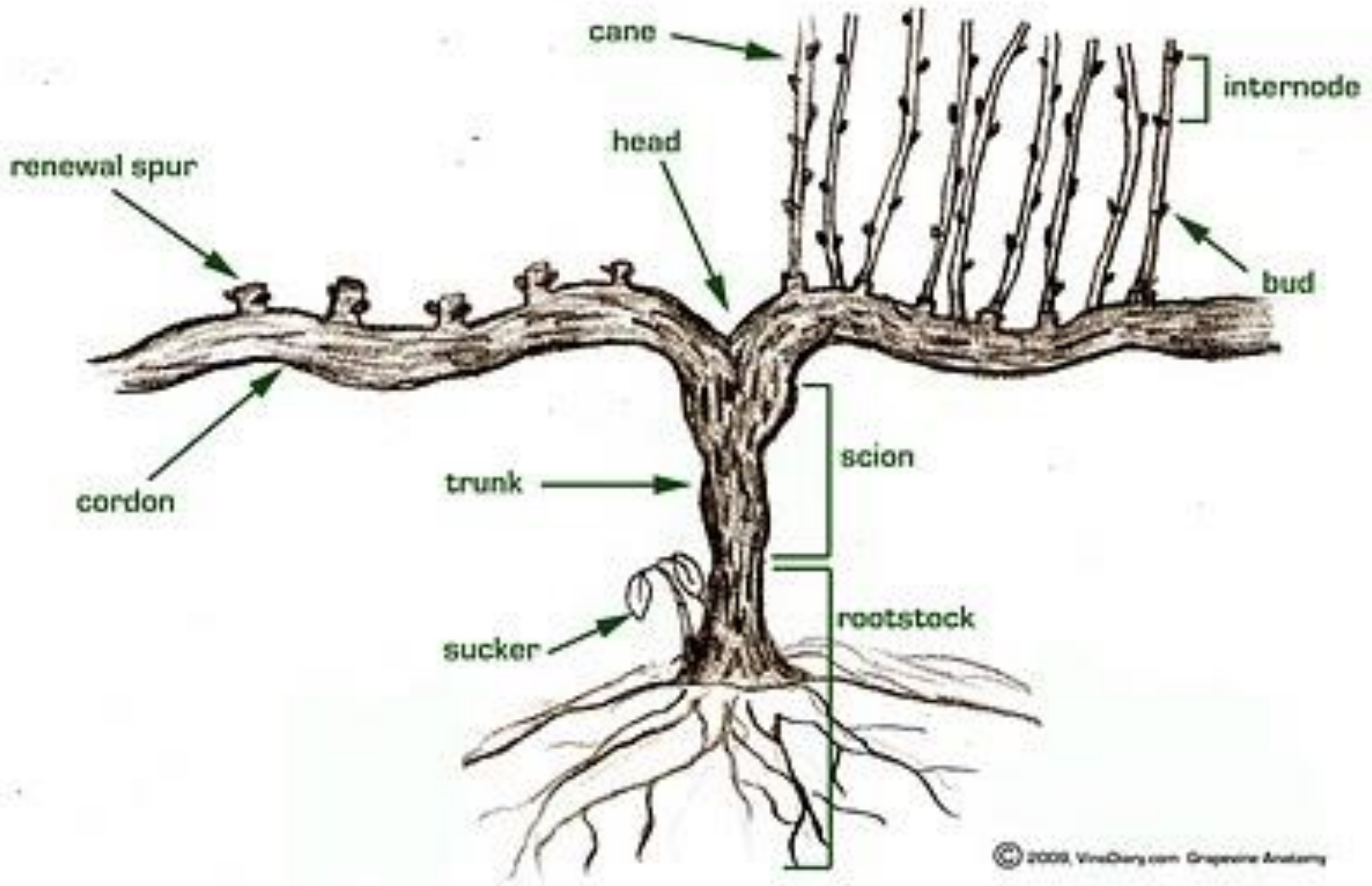
Water: 80-85+%
Alcohol: 9-17%
Acids: 0.4-1%
Sugar: 0.1-1%
Phenolic Compounds



Viticulture

- The science of growing grapes
- Vineyard Management
 - Physical Structure of the vine
 - Life Cycle of The Vine
 - Pruning, Trellising, Canopy, Irrigation, Harvest...
- Decisions of Environmental Stewardship
 - Conventional, Sustainable, Organic, Biodynamic

The Grape Vine

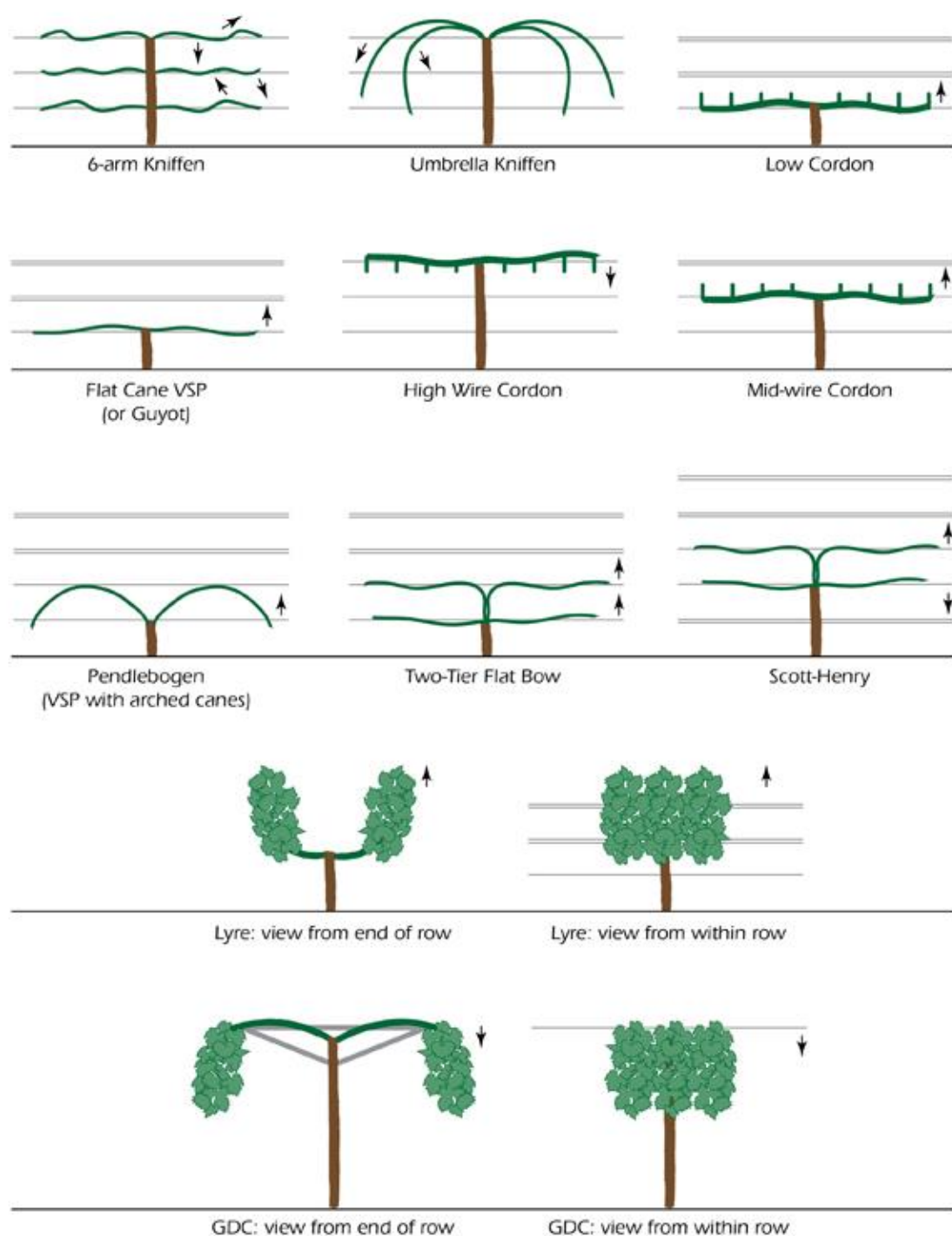


The Annual Life Cycle of a Vine

- 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

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.html>

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
- Likelihood of Fog During a Season
- Average % of Sunlight
- Actual Temperature
- Actual Rain Fall
- Actual Fog/Cloud Cover/Sunlight

Vineyard Management

Conventional, Organic,
Biodynamic, Sustainable



Oenology:

The scientific study of wine & winemaking

- Vinification: the process of making wine
 - Harvest → Sorting
 - Fermentation
 - Yeast stains, oak vs. stainless steel, 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

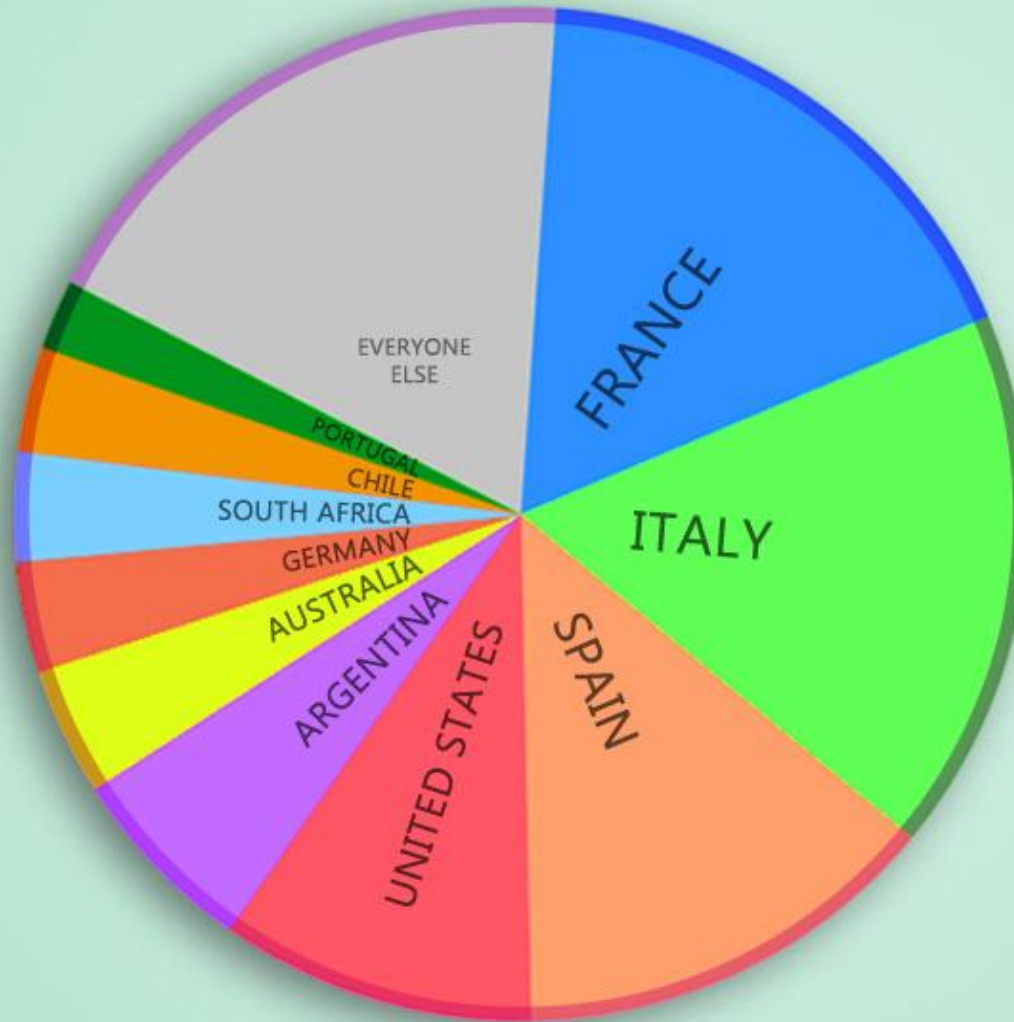


Gallo Wine Production Facility



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

*STATISTICS FROM 2010 - WWW.WINEINSTITUTE.ORG

WineFolly
LEARN BY DRINKING

Image credit: <http://winefolly.com/update/top-wine-regions-of-the-world/>



TOP WINE REGIONS OF THE WORLD*

*PRODUCTION STATISTICS FROM 2010 - WWW.WINEINSTITUTE.ORG

WineFolly
LOVE BY DRINKING

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

- In preparation for week 1
 - Read: Society of Wine Educators, Chapter 1, 3, 4, 5
- Week 2
 - Join the OpenLab and our course site.
 - Read: Society of Wine Educators, Chapter 5, 6, 7, 2