



Grape Ripeness for Harvest

Ramona Valley Vineyard Association

Bill Schweitzer

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Overview

- How to sample grapes
- **Grape Physiology**
- Chemical Assessment
- Sensory Assessment

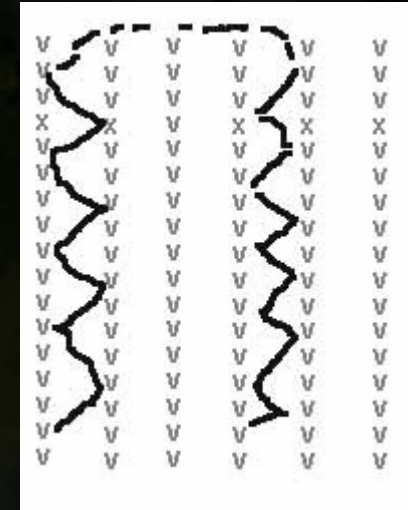
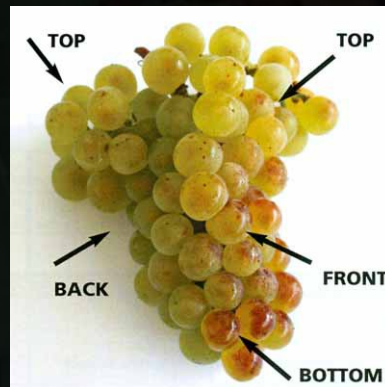
illustrations adapted from "*Winegrape Berry Sensory Assessment in Australia*"
by Winter, Whiting, Rousseau

Why do we sample?

- What the wine becomes is in the grape
- The vine is a forest plant
 - Creating “bird candy”
 - Hiding the grapes until seeds are ready
 - “Irresistible” when ready to propagate
- Grapes ripen at different speeds

Divide vineyard into blocks

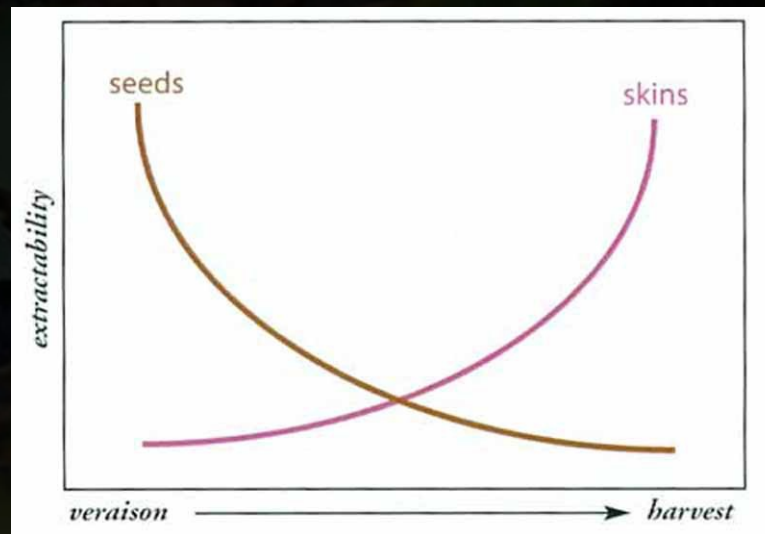
- Test the ENTIRE BLOCK
- Test all parts of the cluster



- Enough grapes for 20 cc of juice
 - (about 100 grapes)

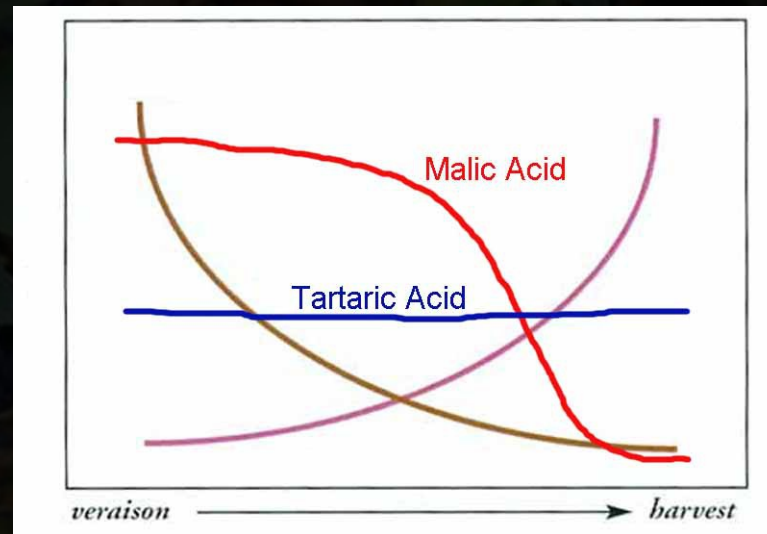
Grape Physiology

- Phenolics – tannic intensity
- Acid
 - Tartaric
 - Malic
- Aromas / Flavors
- Sugar



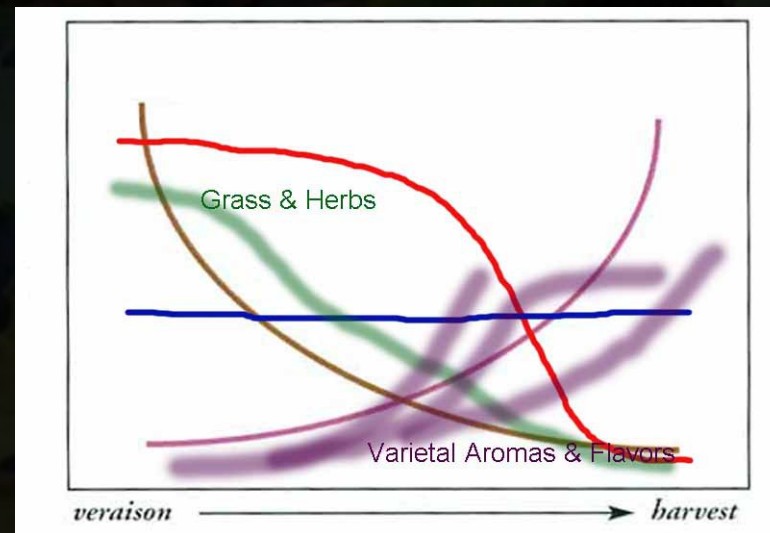
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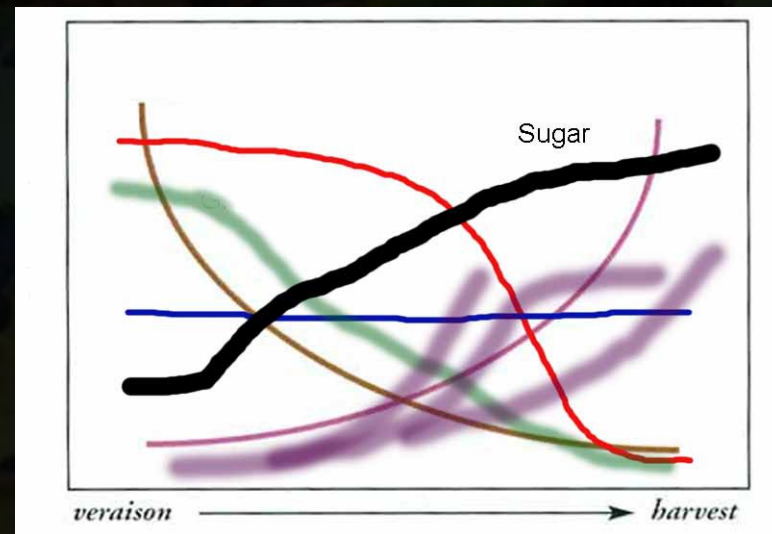
Grape Physiology

- Phenolics – tannic intensity
- Acid
 - Tartaric
 - Malic
- **Aromas / Flavors**
- Sugar



Grape Physiology

- Phenolics – tannic intensity
- Acid
 - Tartaric
 - Malic
- Aromas / Flavors
- **Sugar**



Chemical Testing

- **BRIX – percent sugar**
- Measure with refractometer or hydrometer
- Winemaker will give you a target 20 – 26 Brix

Chemical Testing

- **Free Acid – pH - use a good pH meter**
- pH 1 = 1/10 hydrogen ⁺ ions / liquid
- pH 2 = 1/100 H⁺
- pH 3 = 1/1000 H⁺
- pH 4 = 1/10000 H⁺
- pH 5 = 1/100000 H⁺
- pH 6 = 1/1000000 H⁺
- pH 7 = 1/10000000 H⁺ <----- pH of Water

adding water to pH3 does this 1.00001 / 1000 H⁺

Chemical Testing

- **Titrateable acid (TA)**
- Disassociation of organic acids
(measures total of Tartaric & Malic)
- WHY target pH = 8.2 ?
- That's when all the organic acids have given up their **free H⁺ ions**

Chemical Testing

- **Targets:**
- $\text{BRiX} \times \text{pH}^2 = 220 \dots 260$

$(24 \times 3.2^2 = 245)$

$(23 \times 3.4^2 = 265)$

- $\text{BRiX} / \text{TA} = 30 \dots 32$

$(24 / .75 = 32)$

$(23 / .7 = 32.8)$

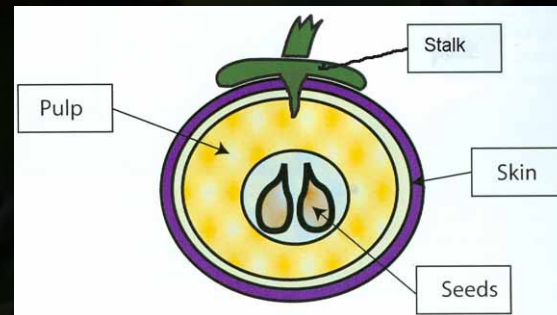
BRiX ° pH2	3	3.1	3.2	3.3	3.4	3.5	3.6	3.7
20	234	250	266	283	301	319	337	356
20.5	236	245	261	278	295	312	328	348
21	238	249	266	272	289	306	324	342
24.5	221	235	251	267	283	300	318	335
24	210	226	246	261	277	294	311	329
23.5	212	226	241	256	272	288	305	322
23	207	221	236	250	266	282	298	315
22.5	203	216	230	245	260	275	292	308
22	190	211	225	240	254	270	285	301
21.5	194	207	220	234	248	263	279	294
21	189	202	215	229	243	257	272	287
20.5	185	197	210	223	237	251	266	281
20	180	192	205	219	231	245	259	274

BRiX / TA	.65	.70	.75	.80	.85	.90	.95	1.00
20	40	37	35	33	31	29	27	26
20.5	39	36	34	32	30	28	27	26
21	38	36	33	31	29	27	26	25
24.5	36	35	33	31	29	27	26	25
24	37	34	32	30	28	27	25	24
23.5	36	34	31	29	28	26	25	24
23	35	33	31	29	27	26	24	23
22.5	35	32	30	28	26	25	24	23
22	34	31	29	28	26	24	23	22
21.5	33	31	29	27	25	24	23	22
21	32	30	28	26	25	23	22	21
20.5	32	29	27	25	24	23	22	21
20	31	29	27	25	24	23	21	20

Linda Bisson, UC Davis

Sensory Assessment

- New techniques used in France, adapted in Australia
- Visual & Tactile
- PULP character
- SKIN
- SEED



Visual & Tactile

- **SOFTNESS**

1. hard 2. elastic 3. plastic 4. soft

- **STALK REMOVAL**

1. lots of pulp 2. some pulp 3. little pulp 4. none

- **COLOR**

1. pink 2. red: translucent 3. red: not even 4. black-red
1. green 2. green-yellow 3. straw yellow 4. amber

PULP

- **Detachment** 1.pulp on skin ... 4. no pulp on skin
- **Juiciness** 1.gelatin ... 4. 100% juice
- **Sweetness** 1.not sweet on tongue ... 4. very sweet
- **Acidity** 1.very acidic ... 4. low acid
- **Herbaceous** 1.intense ... 4. absent
- **Fruity Aromas** 1.absent ... 4. intense

SKIN (chewing)

- **Disintegration** 1.hard chew ... 4. easy, homogenous
- **Acidity** 1.very acidic ... 4. low acid
- **Herbaceous** 1.intense ... 4. absent
- **Fruity Aroma** 1.absent ... 4. intense
- **Tannic** (tongue slide) 1.easy ... 4. sticks to roof
- **Tannin Grain** 1.large & rough ... 4. soft & silky

SEEDS

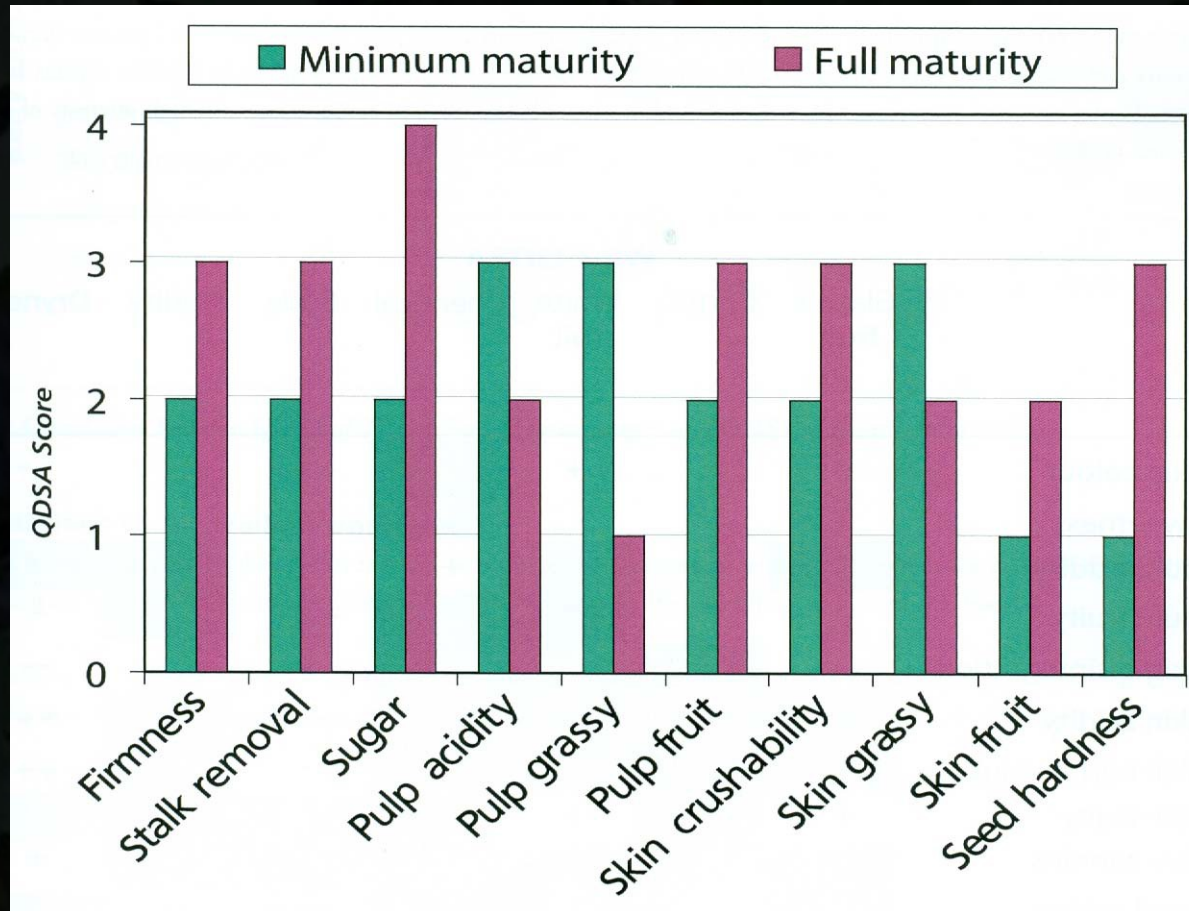
- **Color** 1.green 2. brown-green 3.grey-brown 4.brown
- **Crushable** 1.soft 2.inside soft 3.hard & crack 4. crunchy
- **Flavor** 1.none 2.grassy 3.grass/herbs 4. toasted
- **Astringent** 1.very ... 4. none
- **Tannic** (tongue slide) 1.sticks to roof ... 4. easy

Scoresheet

Vineyard:	BSA FIELD SCORESHEET					
	Taster:				Date : ___/___/___	
Sample 1:	Maturity level				Decision	Notes (abnormal)
	1	2	3	4		
Pulp maturity						
Pulp aromatic level						
Skin maturity						
Seed maturity						
Sample 2 :	Maturity level				Decision	Notes (abnormal)
	1	2	3	4		
Pulp maturity						
Pulp aromatic level						
Skin maturity						
Seed maturity						

Vineyard :	Maturity level				Decision
	1	2	3	4	
Pulp maturity			x		Grapes with some pulp maturity, but not enough in skins and seeds. Can produce basic commercial wine. Can be used for blending with other wines.
Pulp aromatic level			x		
Skin maturity		x			
Seed maturity		x			

Practical Application



Decent Syrah

Good Syrah