

Grapes Establishment and Management



Site Selection

- Soil and topography
 - Well-drained loam, pH 6.0-7.2
 - 125-150ppm K_2O , 30-50ppm P_{2O_5}
 - SE-SW facing slope
 - Air drainage down slope to open area
 - Avoid cold air traps at bottom of slope
 - Avoid sheltered areas with little air movement
 - Disease and insect problems
 - Frost free season of 140-150 days
 - 2000 Heat Units 50F
 - Lowest temps. -10 to (-15) °F is ideal, -20 °F tolerable
 - Global warming, climate change?

Tools To Determine Nutrient Needs

- Establishing new vineyard – soil sampling
 - P and K must be amended before planting
 - P and K non-mobile in soil-incorporate into soil
 - Acidic soils, amend with lime before planting
 - Alkaline soils, amend with sulfur before planting
- Established vineyard – petiole analysis
 - Perform yearly to start tracking nutrients
 - Perform if nutrient deficiencies visually apparent

LAB #: 5839

COOPERATIVE EXTENSION
University of Wisconsin-Extension
University of Wisconsin-Madison
Department of Soil Science

Results also available on-line at <http://uwlax.soils.wisc.edu/reports>
lab number: 5839 access code: q8h55

This Report is for:

County	Account No.
Door	555015

Date Received	Date Processed
4/16/2009	5/1/2009

Slope	Acres	Plow Depth	Irrigated
0%	5	7"	No

Soil Name
unknown (group D)

Field Name
WJ

Previous Crop	no crop
no crop	1.00
corn	0.99
soybean	0.99
oat	0.99
wheat	0.99
barley	0.99
rye	0.99
alfalfa	0.99
clover	0.99
grass	0.99
straw	0.99
other	0.99

DOOR CO UWEX OFFICE -
CO GOVERNMENT CTR, 421 NEBRASKA ST
STURGEON BAY, WI 54235

NUTRIENT RECOMMENDATIONS								
Cropping Sequence	Yield Goal per acre	Crop Nutrient Needs		Fertilizer Credit				Nutrients to Apply
		N	P ₂ O ₅	K ₂ O	Legume N	Manure N	P ₂ O ₅	K ₂ O
		lbs/a	lbs/a	lbs/a	—	lbs/a		
Grape, establishment	all	see below	0	250	0	0	0	0
(no crop)	n/a							
(no crop)	n/a							
(no crop)	n/a							

There is no lime recommendation.

ADDITIONAL INFORMATION

Lime recommendations for apples and cherries apply only to pre-plant tests. Adjustment of pH is impractical once an orchard is established. Other perennial fruit crops must also be limed or amended with an acidifying material and incorporated prior to establishment.

Recommended rates are the total amount of nutrients to apply (N-P-K), including starter fertilizer.

This soil should be monitored more closely because of it has a relatively low potassium buffering capacity.

P₂O₅ and K₂O nutrient application rates are provided for establishment of fruit crops. Nutrient application rates after the establishment year should be based on tissue testing with the goal of achieving and maintaining tissue nutrient concentration sufficiency.

Because of very high P levels, P₂O₅ applications from fertilizer or manure should be reduced and crops with a high P removal should be grown

Year 1: Apply 1 ounce of N per plant two times during the establishment year. This rate applies for the establishment year only. After establishment use tissue testing to guide fertilizer application.

N.R.≡Not required for calculation of lime requirement when soil pH is 6.6 or higher.

TEST INTERPRETATION

Cropping Sequence	Very Low	Low	Optimum	High	Very High	Excessive
Grape, establishment	PPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPP KKKKKKK			PPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPP PPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPP		
(no crop)						
(no crop)						
(no crop)						
Rotation pH	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX		

LABORATORY ANALYSIS

[illegible]

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Field Name
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Previous Crop
no crop

SOIL TEST REPORT

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University of Wisconsin-Madison
Department of Soil Science

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NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal per acre	Nutrient Needs N P ₂ O ₅ K ₂ O lbs/a	Fertilizer Credit Manure N P ₂ O ₅ K ₂ O lbs/a
Grape, establishment (no crop)	n/a	see below	0
(no crop)	n/a	0	0
(no crop)	n/a	250	0

There is no lime recommendation.

ADDITIONAL INFORMATION

Lime recommendations for apples and cherries apply only to pre-plant test crops must also be limed or amended with an acidifying material and incor

Recommended rates are the total amount of nutrients to apply (N-P-K), including

This soil should be monitored more closely because of it has a relatively low

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TEST INTERPRETATION

[illegible]

LABORATORY ANALYSIS

[illegible]
$$1 \text{ oz. N/plant} \times 600 \text{ plants/acre} \times 2 = 75 \text{ lbs/N acre}$$

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Soil Name
unknown (group D)

Field Name
WI

Previous Crop
no crop

NUTRIENT RECOMMENDATIONS								
Cropping Sequence	Yield Goal	Crop Nutrient Needs			Fertilizer Credit			Nutrients to Apply
		N	P2O5	K2O	Legume N	Manure N	P2O5	K2O
	per acre	lbs/a	lbs/a	lbs/a	lbs/a	lbs/a	lbs/a	lbs/a
Grape, establishment (no crop)	all n/a	see below	0	250	0	0	0	0
(no crop)	n/a							
(no crop)	n/a							

There is no lime recommendation.

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Soil Name
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Field Name
WIPrevious Crop
no crop

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[illegible]

Liming recommendations for apples and cherries apply only to pre-plant tests. Adjustment of pH is impractical once an orchard is established. Other perennial fruit crops must also be limed or amended with an acidifying material and incorporated prior to establishment.

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Because of very high P levels, P_2O_5 applications from fertilizer or manure should be reduced and crops with a high P removal should be grown.

Year 1: Apply 1 ounce of N per plant two times during the establishment year. This rate applies for the establishment year only. After establishment use tissue testing to guide fertilizer application.

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[illegible]

102
lbs P/acre

90
lbs K/acre

[illegible]

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barley	0.00
oat	0.00
alfalfa	0.00
clover	0.00
grass	0.00
other	0.00

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	per acre	lbs/a			lbs/a	lbs/a				lbs/a		
Grape, establishment	all	see below	0	250	0	0	0	0	see below	0	250	
(no crop)	n/a											
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TEST INTERPRETATION

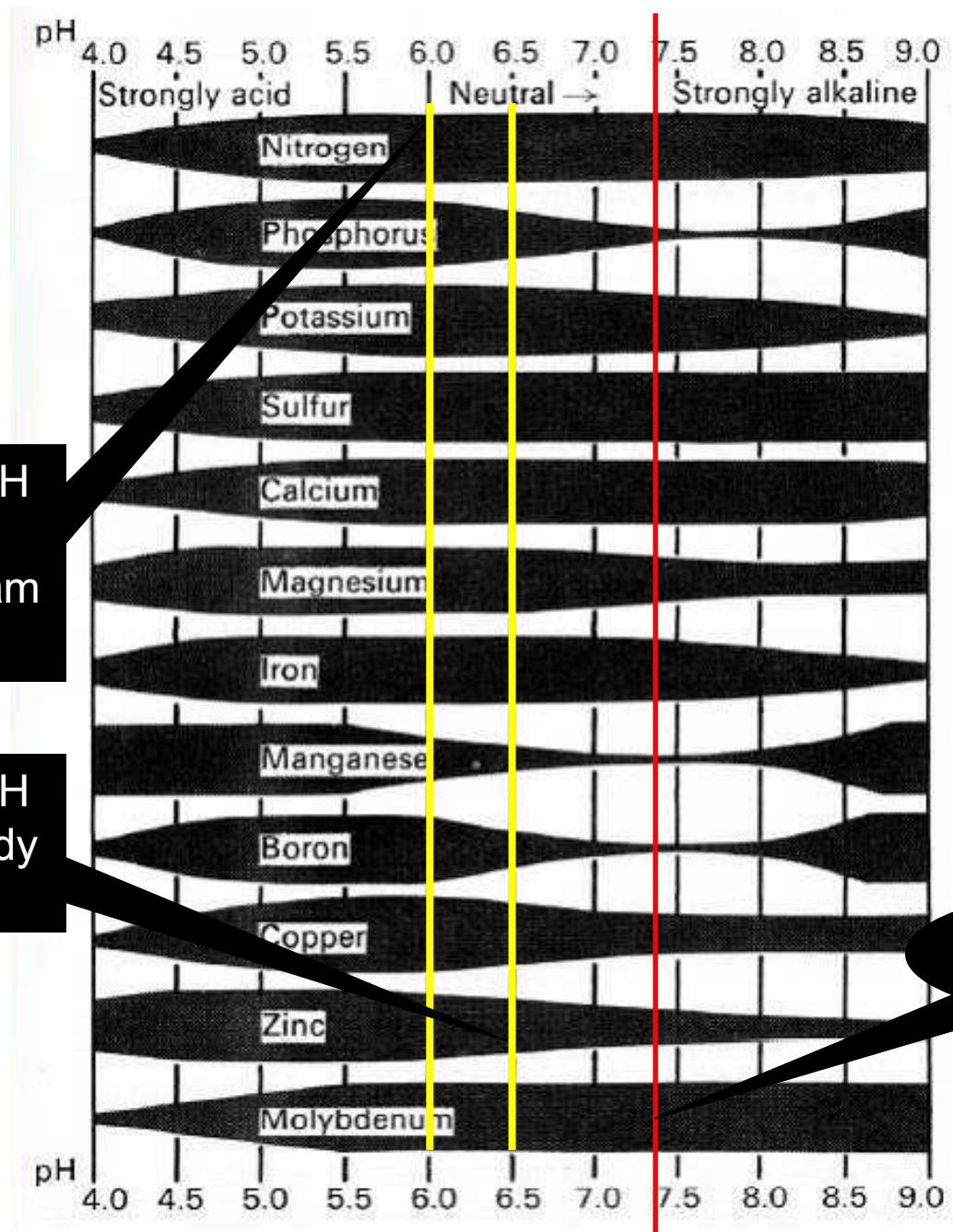
[illegible]

LABORATORY ANALYSIS

[illegible]

Ideal pH
for
clay/loam
soils

Ideal pH
for sandy
soils



Results of
soil test

Lowering Soil pH

		Soil organic matter content (%)					
		0.5 - 2	2 - 4	4 - 6	6 - 8	8 - 10	> 10
		lb S/acre					
Desired reduction in soil pH	0.25	261	784	1220*	1742*	2309*	2700*
	0.50	522	1525*	2439*	3485*	4617*	5445*
	1.00	1045	3049*	4879*	5227*	9235*	10890*
* Do not apply more than 870 lb/acre per year; retest soil between applications.							

Raising Soil pH

- This will be available on soil test report
- Do not worry about raising soil pH if within 0.2 units of target pH
- Lime recommendations are for plow depth of 0 to 7 inches
 - If tilling deeper for planting use multiplier
- Lime needs to be incorporated into soil

Plow depth (inches)	Lime adjustment multiplier
0 to 7.0	1.00
7.1 to 8.0	1.15
8.1 to 9.0	1.31
>9.0	1.46

Adapted from: A2809 Nutrient application guidelines for field, vegetable, and fruit crops in Wisconsin

Established Vineyards

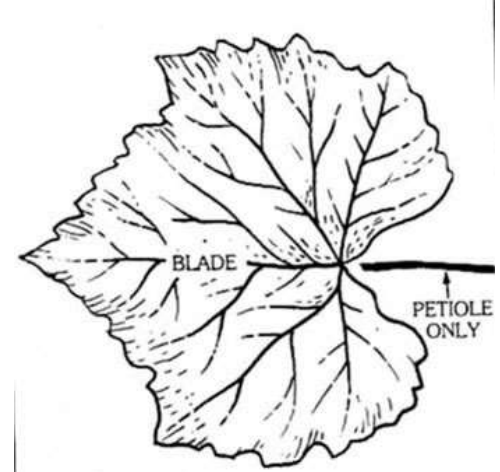
Petiole Analysis

- Why petiole sample
 - Gauge needs of vines
 - Response to fertilizers
 - Detect nutrient deficiencies before they manifest
- When to petiole sample
 - Full bloom = 2/3 of caps shed
 - Early veraison
 - Visual deficiency observed
 - Nutrient deficiencies in vineyards are often site specific
i.e. top of hill, rock outcrop, etc

Established Vineyards

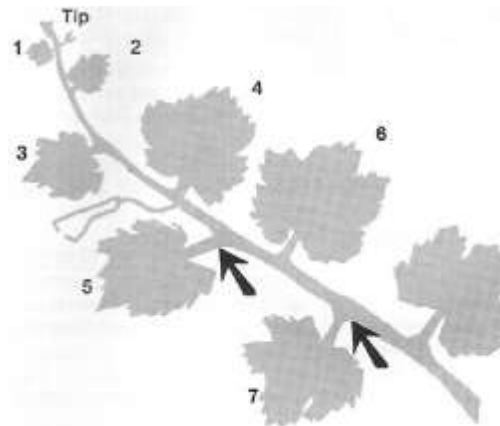
Petiole Analysis

- What to sample
 - Petioles opposite basal clusters
- When to sample
 - At full bloom
 - Early verasion



OR

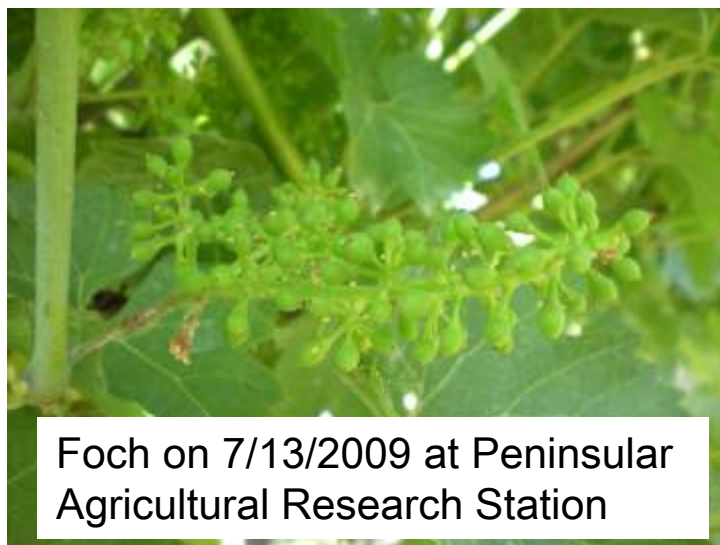
- What to sample
 - Petioles from recently developed mature leaf



Established Vineyards

Petiole Analysis

- Don't use petiole analysis results as justification to apply nutrients until ...
 - Nutrient deficiency was visually apparent at petiole sampling
 - Establish nutrient levels over time
 - Track year to year trends and establish baseline
 - Always sample at same time each year
 - Results are only a snapshot at time of sampling
 - If trends develop i.e.
 - Certain nutrients declining over time and deficiencies manifest, then action is required
 - Be aware that nutrients may be available in soil at sufficient amounts, but unavailable to vine because of pH, organic matter, or chemical interactions



SUBMITTED BY: [REDACTED]
 SUBMITTED FOR: [REDACTED]
 DATE SAMPLED: 7/13/2009
 DATE PROCESSED: 7/16/2009

LAB ID: 30377
 SAMPLE ID: Entire Orchard
 ACCOUNT #: 820
 CROP TYPE: GRAPE
 VARIETY (Specialty Crops Only):
 GROWTH STAGE: N/A
 APPEARANCE: Normal

GRAPE PETIOLE ANALYSIS													
SUMMARY REPORT OF ANALYTICAL RESULTS													
	NITROGEN (N) %	PHOSPHORUS (P) %	POTASSIUM (K) %	CALCIUM (Ca) %	MAGNESIUM (Mg) %	SULFUR (S) %	MANCANESE (Mn) PPM	IRON (Fe) PPM	ZINC (Zn) PPM	ALUMINUM (Al) PPM	COPPER (Cu) PPM	SODIUM (Na) PPM	BORON (B) PPM
RESULTS	1.06	0.27	2.37	1	0.56	0.12	63	18	29	9	5	256	29
NORMAL SUFFICIENCY RANGE	0.80	0.16	1.50	0.50	0.25	0.08	30.00	20.00	30.00	N/A	10.00	N/A	25.00
	TO	TO	TO	TO	TO	TO	TO	TO	TO		TO		TO
	1.20	0.30	2.50	1.00	0.40	0.25	60.00	100.00	60.00		50.00		50.00
*SUFFICIENCY RANGES ADAPTED FROM MSU HORTICULTURAL EXTENSION PUBLICATION E-802													
INTERPRETATION													
HIGH													
OPTIMUM													
LOW										N/A		N/A	

FREQUENTLY ASKED QUESTIONS:

In our region, veraison (Mid July – Mid August) is the ideal time for petiole sampling for several reasons. Veraison sampling gives a better measure of Potassium (K). Potassium levels are especially critical for wine grapes since they are correlated with wine quality (high fruit K leads to high pH and thus unstable wines); there is less vineyard activity (if there is such a thing!) near veraison and more time for petiole sampling; most important is the standard optimum level of each nutrient is determined at veraison. It is recommended collecting petioles about 10 weeks after bloom but before harvest.

Since boron (B) affects fruit set, a late spring leaf sample to identify suspected B problems is normally recommended.

For most situations, a sample of petiole or leaf tissue taken closer to fruit maturation is considered preferable as the best indicator of the crops nutrient status. Earlier samples can be taken if it is suspected that the crop will need in-season nutrient applications.



Foch on 6/29/2009 at Peninsular
Agricultural Research Station

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SUBMITTED FOR: [REDACTED]
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NORMAL SUFFICIENCY RANGE	0.80 TO 1.20	0.16 TO 0.30	1.50 TO 2.50	0.50 TO 1.00	0.25 TO 0.40	0.08 TO 0.25	30.00 TO 60.00	20.00 TO 100.00	30.00 TO 60.00	N/A	10.00 TO 50.00	N/A	25.00 TO 50.00
*SUFFICIENCY RANGES ADAPTED FROM MSU HORTICULTURAL EXTENSION PUBLICATION E-802													
INTERPRETATION													
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Nutrient	Chemical Symbol	Target Values		
		Soil	Petiole Bloom	Late summer petiole (70-100 days after bloom)
Total Nitrogen	N	____ ¹	1.2-2.2%	0.8-1.2%
Phosphorous	P	20-50 ppm	0.17-0.30%	0.14-0.30%
Potassium	K	75-100 ppm	1.5-2.5%	1.2-2.0%
Calcium	Ca	500-2000 ppm ²	1.0-3.0%	1.0-2.0%
Magnesium	Mg	100-250 ppm	0.3-0.5%	0.35-0.75%
Boron	B	0.3-2.0 ppm	25-50 ppm	25-50 ppm
Iron	Fe	20 ppm	30-100 ppm	30-100 ppm
Manganese	Mn	20 ppm	25-1000 ppm	100-1500 ppm
Copper	Cu	0.5 ppm	5-15 ppm	5-15 ppm
Zinc	Zn	2 ppm	30-60 ppm	30-60 ppm
Molybdenum	Mo	____ ³	0.5 ppm	0.5 ppm
Aluminum	Al	<100 ppm ²		
Organic Matter		3 -5%		
¹ Soil nitrogen not evaluated. ² Calcium and Aluminum normally adequate if soil pH is in the range. ³ Not determined for grapes.		5.5 <i>V. labrusca</i> 6.0 Hybrids 6.5 <i>V. vinifera</i>		

Established Vineyards

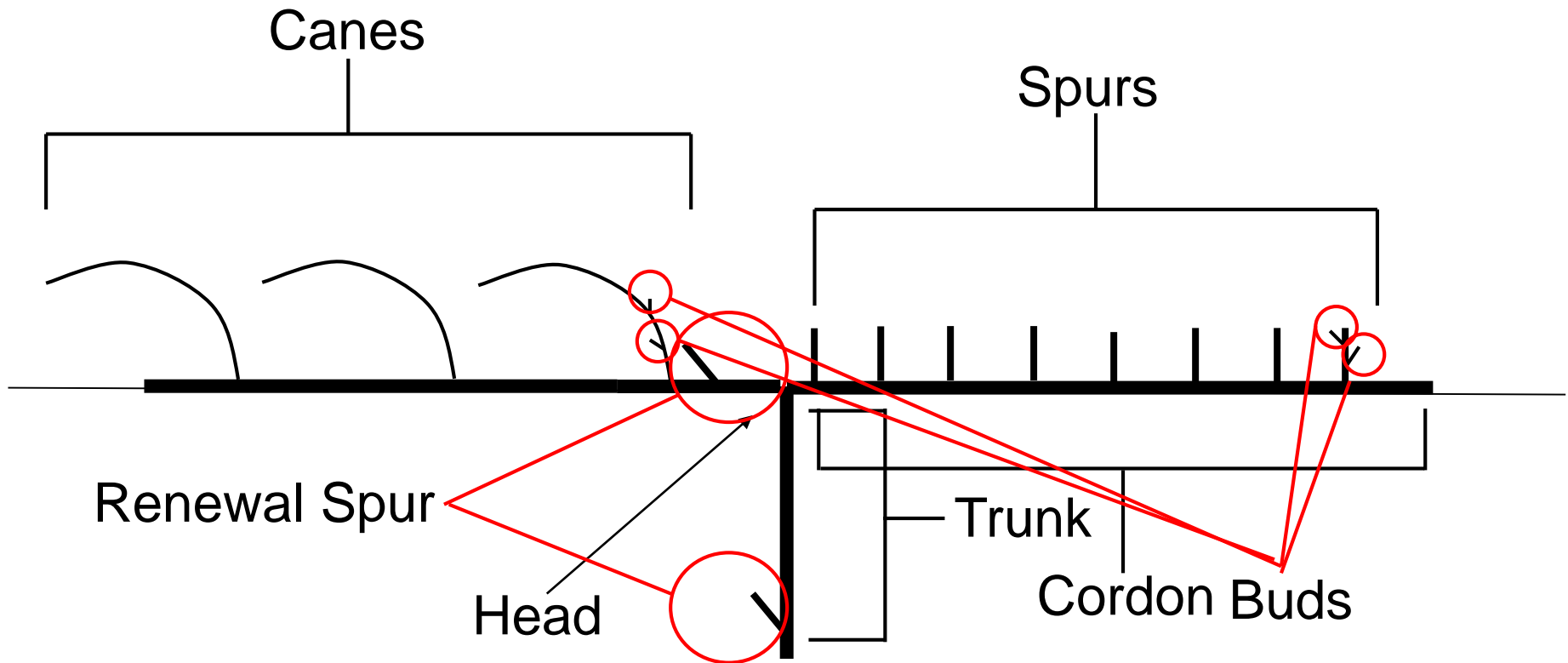
Petiole Analysis

- At this point there is not enough data on petiole nutrient analysis of cold climate grape varieties
- Need to build data
 - Sample at same growth stage yearly
 - Sample by variety
 - If deficiencies do manifest – use petiole analysis to help pinpoint nutrient deficiency

Pruning Overview

- Grape vine anatomy
- Dormant pruning
- Balanced grape vine growth
- Vine imbalance
- Summary
- The First Year and How To

Grape Anatomy



Training Systems

- Vertical shoot positioning (VSP)
 - Bilateral cordons 32 to 36” from ground
 - Catch wires above cordons
 - Shoot growth directed upward
- High Wire
 - Bilateral cordons 66 to 72” from ground
 - Shoots combined downward

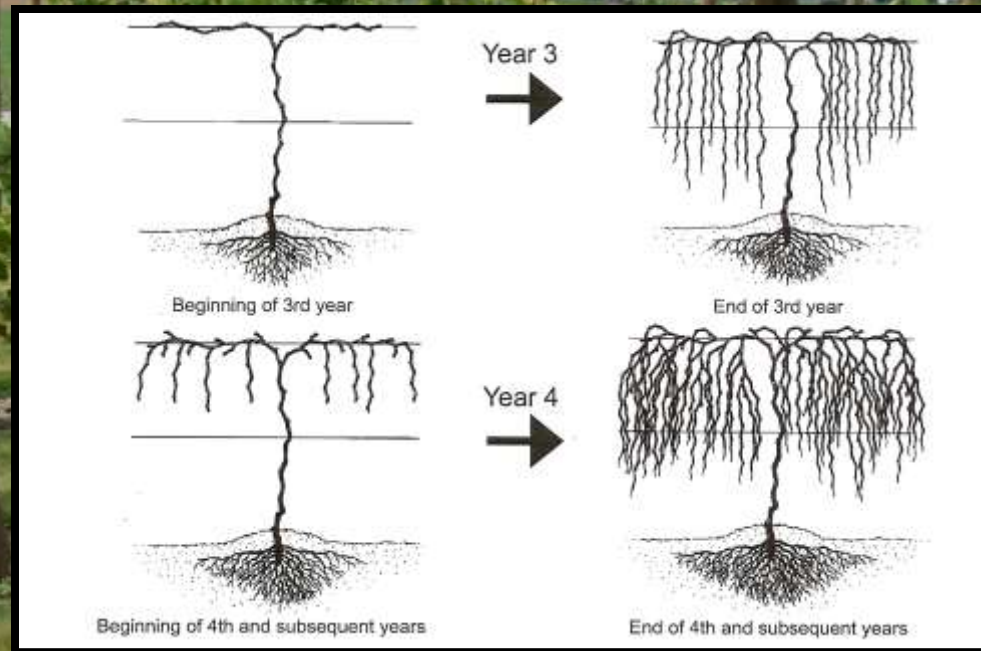
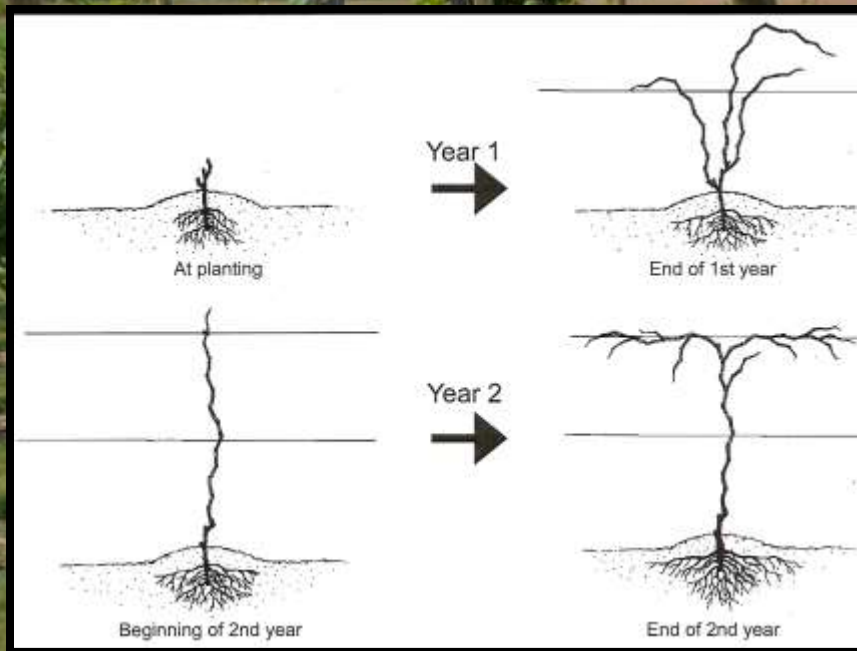
Training Methods

Low-Cordon Vertical Shoot Positioning



Pruning and Training

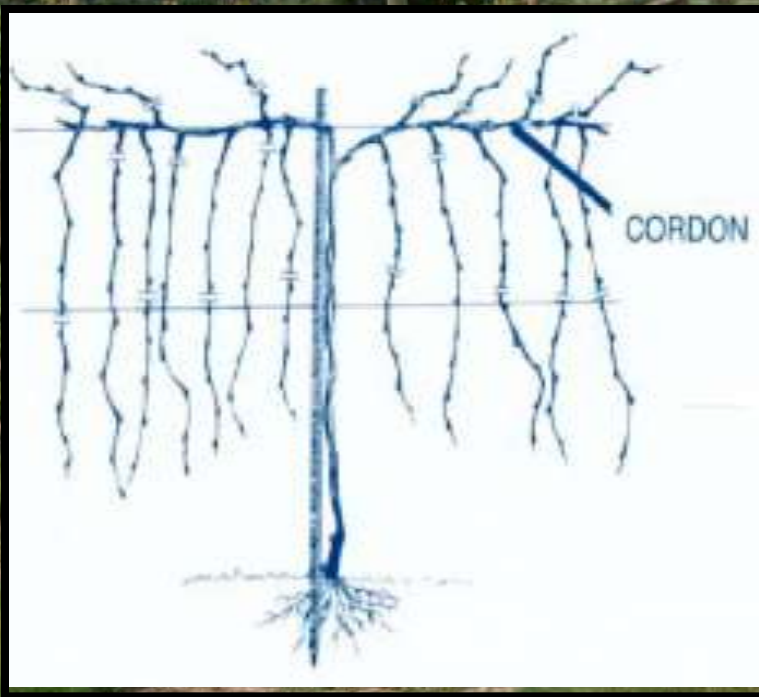
Initial Pruning from planting to fruiting



High Bi-Lateral Cordon
Relies on downward combing of new growth

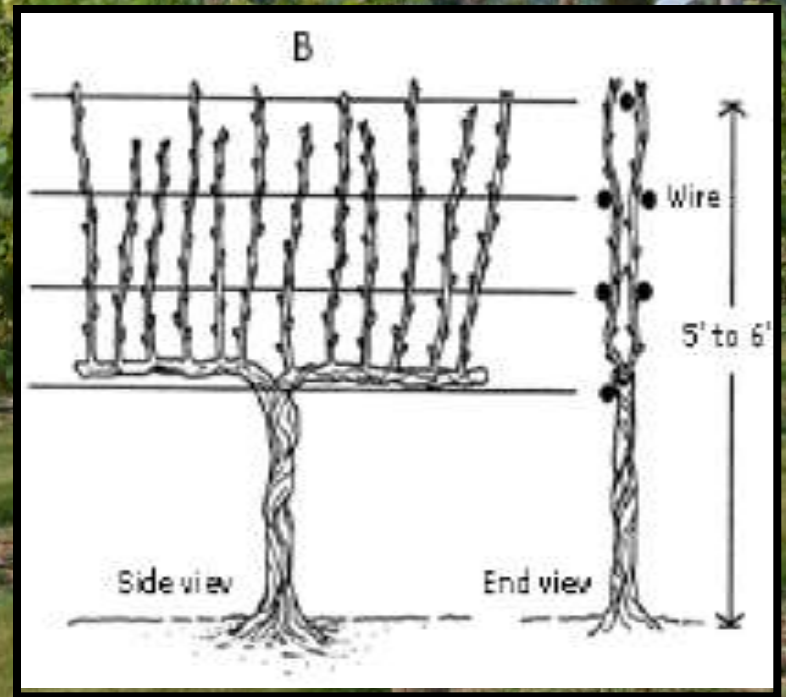
Training Methods

High Cordon



Use for trailing
grape cultivars

Low Cordon

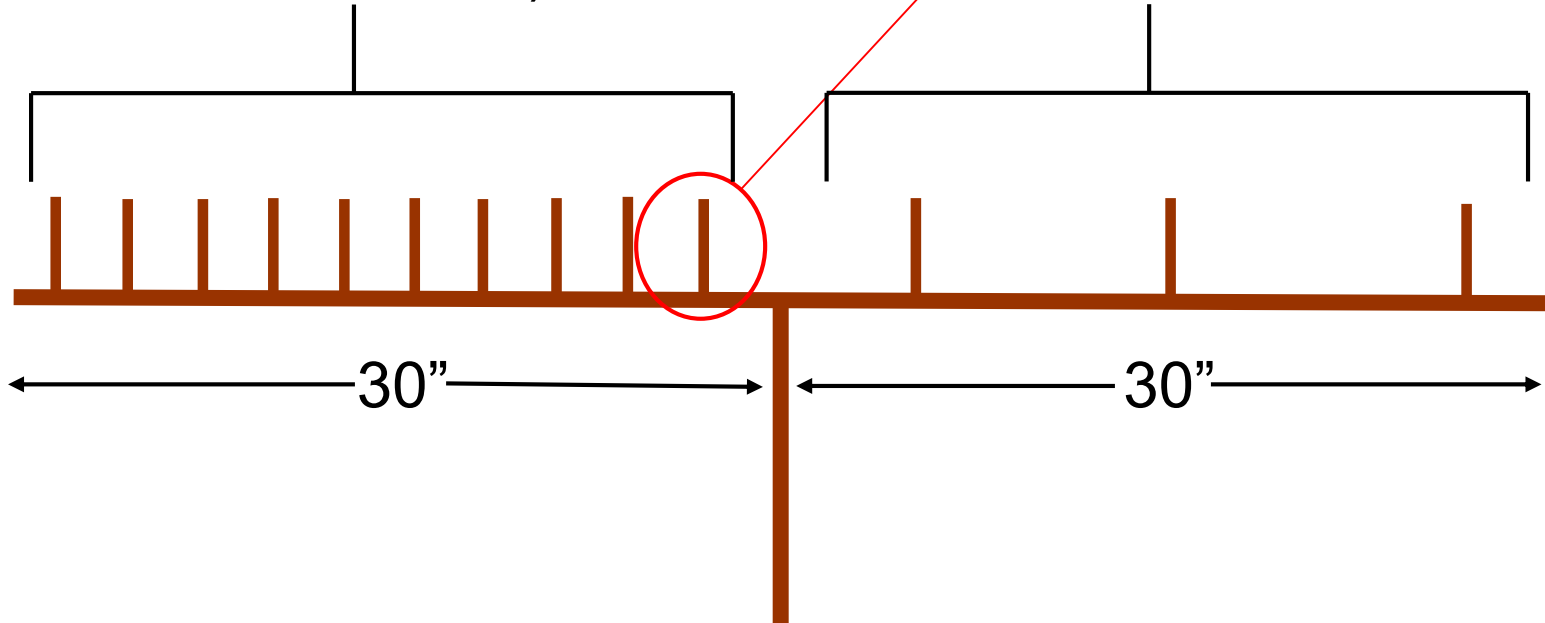


Use for upright
grape cultivars

How many Nodes?

VSP: 3 to 5 SHOOTS/FT

$$(10 \text{ SPURS} \times 2 \text{ BUDS/SPUR}) / 2.5 \text{ FT} = 8 \text{ BUDS/2.5 FT} = 2.4 \text{ BUDS/FT}$$



How many Nodes?

To many nodes

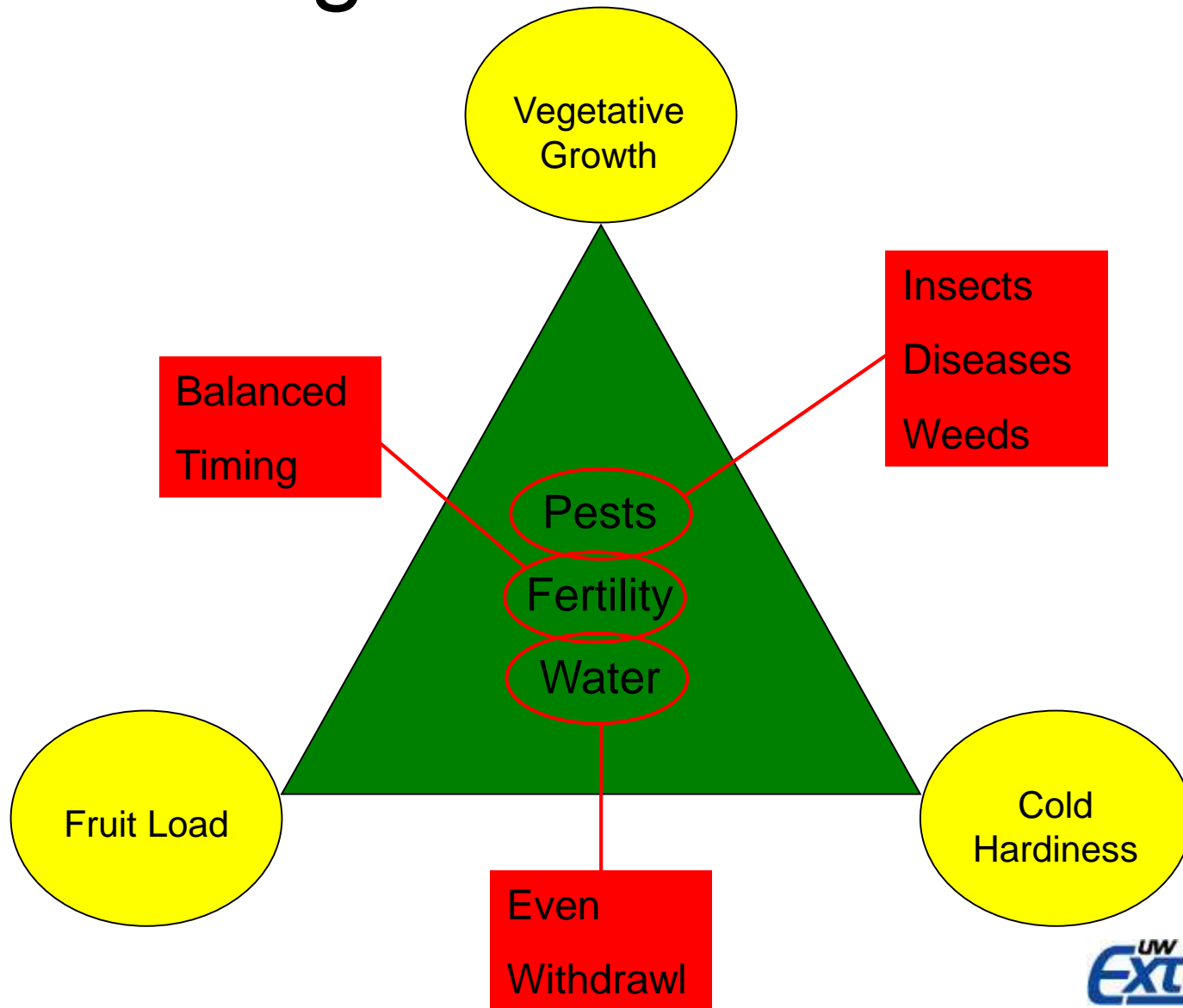
- Reduced brix in fruit
- Reduced fruit pigmentation
- Reduced shoot/cane diameter
- Increased disease pressure
- Maturation of wood poor
- Increased winter Injury

To few nodes

- Vigorous shoot growth
- Increase internode lengths
- Reduced fruit set
- Increase in fruit shading
- Increase in number of “bull canes”
- Decrease in bud fruitfulness
- Reduced cold hardiness



Pruning and Vine Balance



Summary

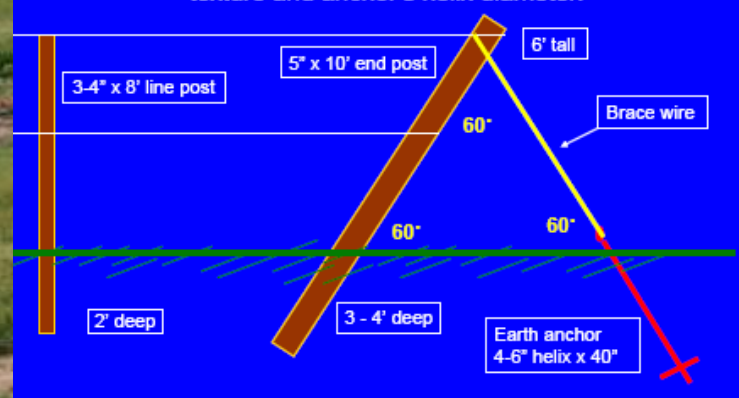
- Vine training system dictates pruning to maintain correct vine architecture
- Dormant pruning balances vegetative and reproductive growth to
 - Maintain fruit quality
 - Maintain cold hardiness
 - Maintain vine health

Trellis Construction

- Trellis responsible for vine + crop weight
 - Provides platform for pruning and training
 - Needs to function for 20-25yrs.?
 - Construct once and only once
- In place year one preferred
 - Wire available for initial shoot
 - Keep canes off of ground
- Training systems for trellis
 - Cane pruning
 - Spur(2-3 bud cane) pruning

Anchored End Post System with an Earth Anchor

Suitable for rows up to 600 ft, but this is affected by soil texture and anchor's helix diameter.



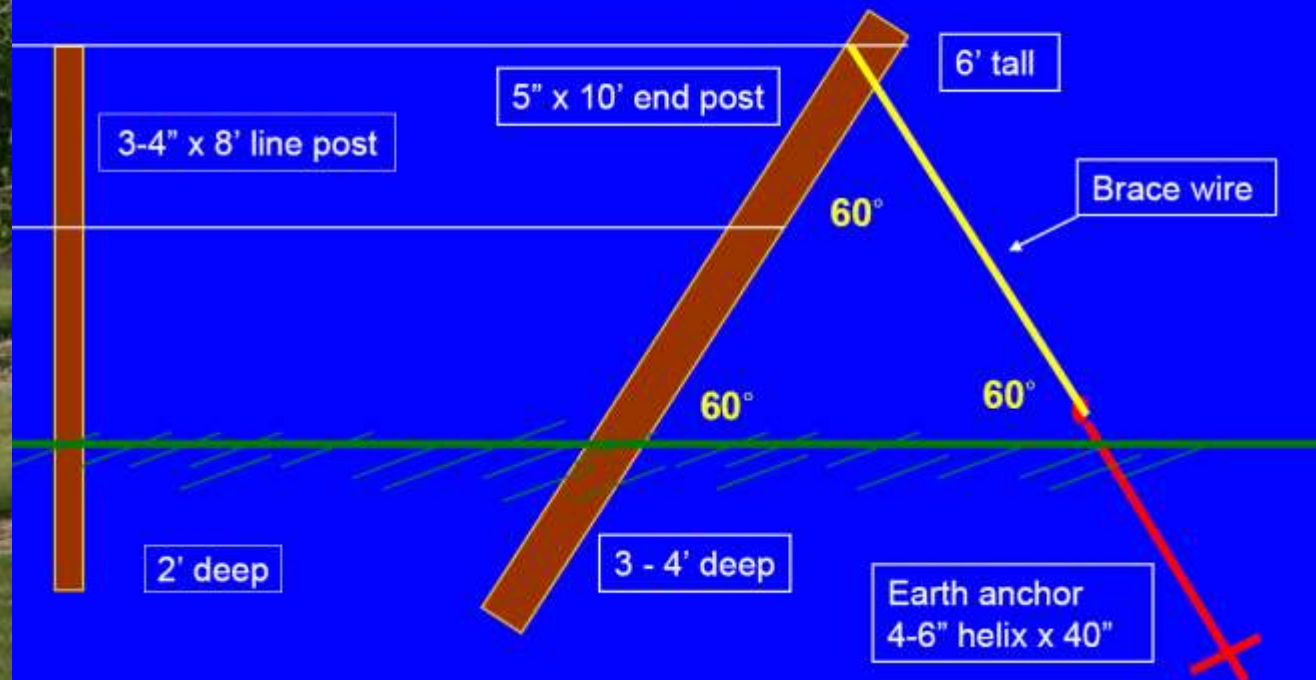
Major Trellis Components

- **Posts: Wood (preferred), steel, or other material**
- **spaced 21, 24 or 28 ft apart**
 - – Dependent on vine spacing
- **• Strong end-post design**
 - – Anchored: earth anchor, tie-back post, or deadman
- **for rows less than 600 ft.**
- **– Braced: H-brace or slant brace for rows over 600 ft.**
- **• High-tensile galvanized steel wire-12 gauge**
 - – High cordon, or Kniffen: 1 to 3 wires
 - – Vertical shoot positioning: 5 to 7 wires
 - – Geneva Double Curtain: 3 or 4 wires

End Post

Anchored End Post System with an Earth Anchor

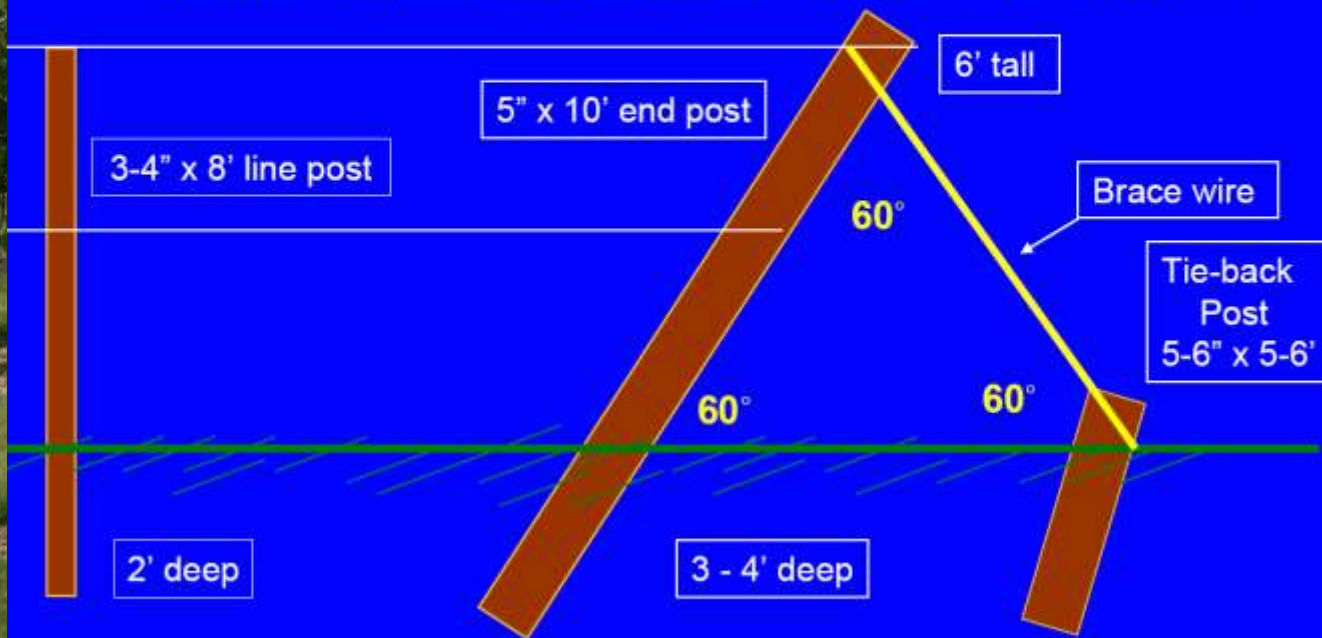
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End Post

Anchored End Post System with a Tie-back Post

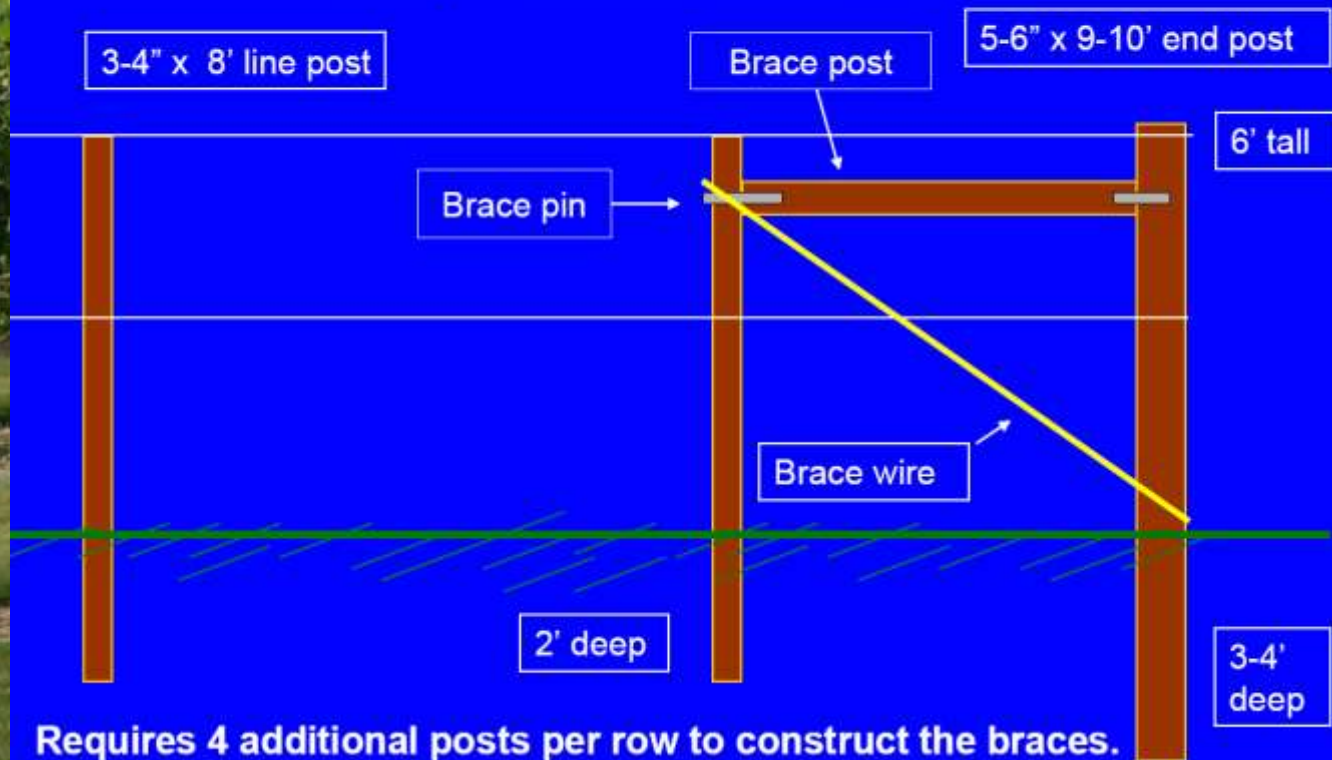
Suitable for rows up to 600 ft. Cost of materials will often determine whether an earth anchor or tie-back post is used.



End Post

H-Brace End Post System

Required for rows over 600 ft



Line Post

Line Post
Should be positioned between vines

3-4" x 8' line post

2' deep



Grape Pests

- **Weed management critical during establishment years**
 - Start weed free
 - Maintain weed free zone in rows
 - Weeds impede air flow-resulting in potential higher incidence of grape diseases

With Weed Control



Without Weed Control



Diseases Problems

- Powdery Mildew
- Downy Mildew
- Black Rot
- Phomopsis Cane and Leaf spot



Powdery Mildew

- Fungal Disease
- Can infect all green tissue
- Cluster petioles and stems
 - Susceptible all season
- Berries susceptibility
 - Based on sugar content
 - <10% high, >10% none
- Overwinters in buds & canes
- Dependent on environment
 - Temps. 68-80F
 - Cloudy and High Humidity



Powdery Mildew Management

Early Control is Critical

- Heavy rains will disrupt development
- Dry, warm, am/pm dews favor development
- Fungicide applications; 8-10" shoot-pre-bloom
 - 2-3 Applications ,repeat Sept-Oct.; Weather dependent
- Commercial
 - Nova, Elite, Procure
 - Strobilurins; Sovran, Flint
 - Broader spectrum; Control other diseases
 - Protective qualities
- Home vineyards
 - Immunox (Myclobutanil)



Downy Mildew

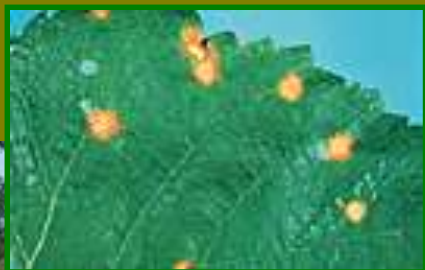
- Fungal disease
- Overwinters in infected leaves
- Early leaf infection moves to blossoms
- Favored by rapid growth + wet conditions
- Ideal temperature for infection 65° F



Downy Mildew Management

- **Susceptibility Dependent on Variety**
 - Vinifera hybrids most- American least
- **Control Starts Early**
 - Initial shoot growth to pre-Bloom
 - Critical before bloom to prevent fruit infection
 - Fungicide applications very effective
 - Continue 10-14 interval dependent on weather
- **Commercial**
 - Sovran, Flint, Dithane, Mancozeb or Captan
- **Home**
 - Captan, Dithane

Black Rot



- Fungal disease infecting leaves - fruit
 - Overwinters in mummified fruit
- Infects early leaves
 - Requires a wetting period
 - Temperature + rainfall(.1"+) + Hrs. leaf wetness
 - Sporulates on leaves and infects fruit
 - Susceptibility lessens as leaves, fruit mature
 - Vinifera+++, riparia, resistant
 - Control with Captan, Dithane
 - Begin at Pre-bloom – Verasion (fruit coloring)
 - Intervals of 14 days, 21 days dry weather

Phomopsis

- Fungus Overwinters In Canes and Buds
- Spores Released in Spring
 - Needs Free Water
 - Optimum Temps. Of 65-70F
 - Susceptibility
 - Very Young Tissue of Stems and Fruit
 - Bud Break – Early Fruit Set
 - Varies Among Varieties



Phomopsis Management

- **Sanitation**
 - Remove all dead and infected canes
 - Use only clean healthy propagation wood
- **Fungicide Program**
 - Start early shoot development
 - Continue through fruit set-pea sized fruit
 - Early protection
 - Captan, Dithane

Grape Insects

- Grape Berry Moth
- Grape Leafhopper
- Grape Flea Beetle
- Rose Chafer
- Sporadic Pests



Grape Berry Moth

- Overwinters in cocoon on ground
- Adults emerge May 15-June 15
- Eggs laid near/On grape clusters
- Look for webs on clusters
- 1st Generation pupate in leaf
- 2nd Generation larva enter fruit
- Larvae leave fruit to pupate in leaves and debris on ground
- Control with Sevin if detected



Leafhoppers

- Grape and Potato
- Overwinter or migrate
- Feeding speckles leaves
- Examine leaf undersides
- High populations
 - Can Stunt Vines
 - Fruit Quality Affected
- Treatment
 - Imidacloprid, Imidan, Sevin



Grape Flea Beetle

- Emerge in Spring
 - Feed on swelling suds
- Lay eggs on emerging leaves
- Hatching larvae feed on lvs.
- Monitor on warm spring days
 - Apply Danitol or Sevin to active adults
 - Can cause significant damage



Rose Chafer

- Larvae overwinter in soil
- Adults emerge at bloom
- Adults feed on blossoms developing, fruit, and leaves
- Common pest in light sandy soils
- Control with Sevin, Danitol, and Assail



Sporadic Pests

- **Phylloxera**
 - Aphid-like insect
 - Foliar most important to Midwest
 - Root feeding important to Vinifera hybrids
 - Produces galls on leaves
 - Sevin or Danitol at pre-bloom if galls present
- **Japanese Beetle**
 - Found in Green Bay nurseries
 - Vinifera hybrids most susceptible
 - Monitor and pray



Correctly Identify Pests



Correctly Identify Pests



Correctly Identify Pests



Correctly Identify Pests



Correctly Identify Pests

Grape Tumid Gallmaker



5/26/2009

Grape Phylloxera



7/6/2009

Grape Pests and Phenology

Growth stage Visual	Bud swell	Shoot 1-5"	Shoot 8-12"	Pre- bloom	Bloom	Pea- sized	Berry touch	Bunch closin g	Verais on	Pre- harvest	Harves t	Post- Harves t
Growth stage Modified Eichhorn-Lorenz	2-3	7-13	14-18	19-22	23	31	32	33-34	35	36-37	38	39-47
Insects												
Cutworm	+	+										
Grape Flea beetle	+											
Rose Chafer				+	+	+						
Grape Berry Moth				+	+	+	+	+	+	+	+	+
Grape Leafhopper				+	+		+	+	+	+	+	
Potato Leafhopper			+	+	+		+	+	+			
Japanese beetle								+	+	+		
Diseases												
Phomopsis		+	+	+	+	+	+	+	+	+	+	
Black rot		+	+	+	+	+	+	+	+			
Downy mildew			+	+	+	+	+	+	+	+	+	+
Powdery mildew		+	+	+	+	+	+	+	+	+	+	+
Botrytis bunch rot					+			+	+	+	+	

Grape Pests and Phenology





Harvest



- **Pre-Harvest**
 - Leaf removal around clusters at veraison
 - Color and sugar development
 - Late cluster thinning
 - Two-three clusters per shoot for ripening
 - Table grape harvest
 - Multiple picks for color and flavor
 - Will not develop more flavor after harvest
 - Store at 35F for up to 7 days
 - Wine grapes
 - Sugar development
 - Should be 20%+
 - Use of refractometer to test

Information

- Weekly Grape IPM Scouting Reports
<http://www.uwex.edu/ces/cty/door/>
- Wisconsin Grape Growers Association
<http://wigrapes.org/>
- Grape Cultivar Trials @
 - West Madison ARS
 - Peninsular ARS
 - Spooner ARS
- Dean Volenberg
dean.volenberg@ces.uwex.edu

Upcoming Events

PROGRAM

- 10:30 AM *Balancing Vegetative and Reproductive Growth and What Happens When This Balance Is Interrupted*
♦ Dean Volenberg, Door Co. UW Extension
- 10:45 *Emerging Grape Insect Pests to Watch For*
♦ Dean Volenberg, Door Co. UW Extension
- 11:00 *Update on UW CALS Grape Growing Initiative- Movement Toward Increased Grape Quality*
♦ Dick Weidman, Peninsular Agricultural Research Station
- 11:30 *Vineyard Demonstration on Trellis Construction, Pruning and Training: Non-Bearing to Mature Vines*
♦ Dick and Dean
- 1:00 Questions and Warm Up in Conference Room



The Peninsular Research Station is located on Hwy 42 N about 1/2 mile north of the 42/57 split and stoplight

Questions

Dick Weidman
Phone 920-743-5406
rweidman@wisc.edu

Dean Volenberg
Phone 920-746-2263
dean.volenberg@ces.uwex.edu

An EEO/AAE employer, University of Wisconsin-Extension provides equal opportunities in employment and programming, including Title IX and American with Disabilities (ADA) requirements. La Universidad de Wisconsin-Extension, un empleador con igualdad de oportunidades y acción afirmativa (EEO/AAE), proporciona igualdad de oportunidades en empleo y programas, incluyendo los requisitos del Título IX (Title IX) y de la Ley para Americanos con Discapacidades (ADA).



GRAPE PRUNING SEMINAR

SATURDAY, April 9, 2011
10:30 AM
UW PENINSULAR
RESEARCH STATION
4312 HWY 42
STURGEON BAY, WI



Upcoming Events

Program Schedule

- 9:00 AM Registration / Cost \$20.00/Person (includes lunch & materials)
- 9:30 There Is Something Fishy About Bitter Pit Control in 'Honeycrisp'
- Matt Stasiak, Peninsular Research Station (PARS)
- 10:00 What We Are Planting In the Research Station High Tunnel
- Dick Weidman, PARS
- 10:30 Break
- 10:45 Breaking New Ground For Insect Management in Cherry
- Nikki Rothwell, MSU Traverse City Research Center
- 11:30 Ag-Lite Crop Insurance Program
- Nicole Gueck, AgriLogic
- 12:00 Lunch — Sponsors:
- Door County Cooperative, Bob Haen
- T&H Agri-Chemicals, Jack Weber
- Wilbur Ellis, Jim Christenson
- 12:45 Disease Management Issues in Strawberry
- Patti McManus, UW Plant Pathology
- 1:30 Finding GAP in Your Farm Operation
- Rebecca Harbut, UW Horticulture Fruit Specialist
- 2:00 Break
- 2:15 Codling Moth Mating Disruption in Door County
- Matt Stasiak, PARS
- 2:45 Emerging Fruit Insect Pests
- Dean Vollenberg, UWEX-Door County
- 3:00 ARS and The State Budget Cuts/PARS Strategic Plan
- Dwight Mueller Director, ARS/Dick Weidman, PARS

Crossroads Learning Center
Located at the corner of
Hwy 42/57 & County Trk. TT
(2041 Michigan Street)



Lunch Reservations Required
by Tuesday, April 5!

email: rweidman@wisc.edu

Phone: 920-743-5406

**UW PENINSULAR
RESEARCH STATION
FRUIT SCHOOL
Tuesday
April 12, 2011**



Crossroads Learning Center
2041 Michigan St.
Sturgeon Bay, WI



COLLEGE OF
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University of Wisconsin-Madison

Extension
Cooperative Extension

Questions

