Spring Vineyard Management Tips From the Growers

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Spring Vineyard Management

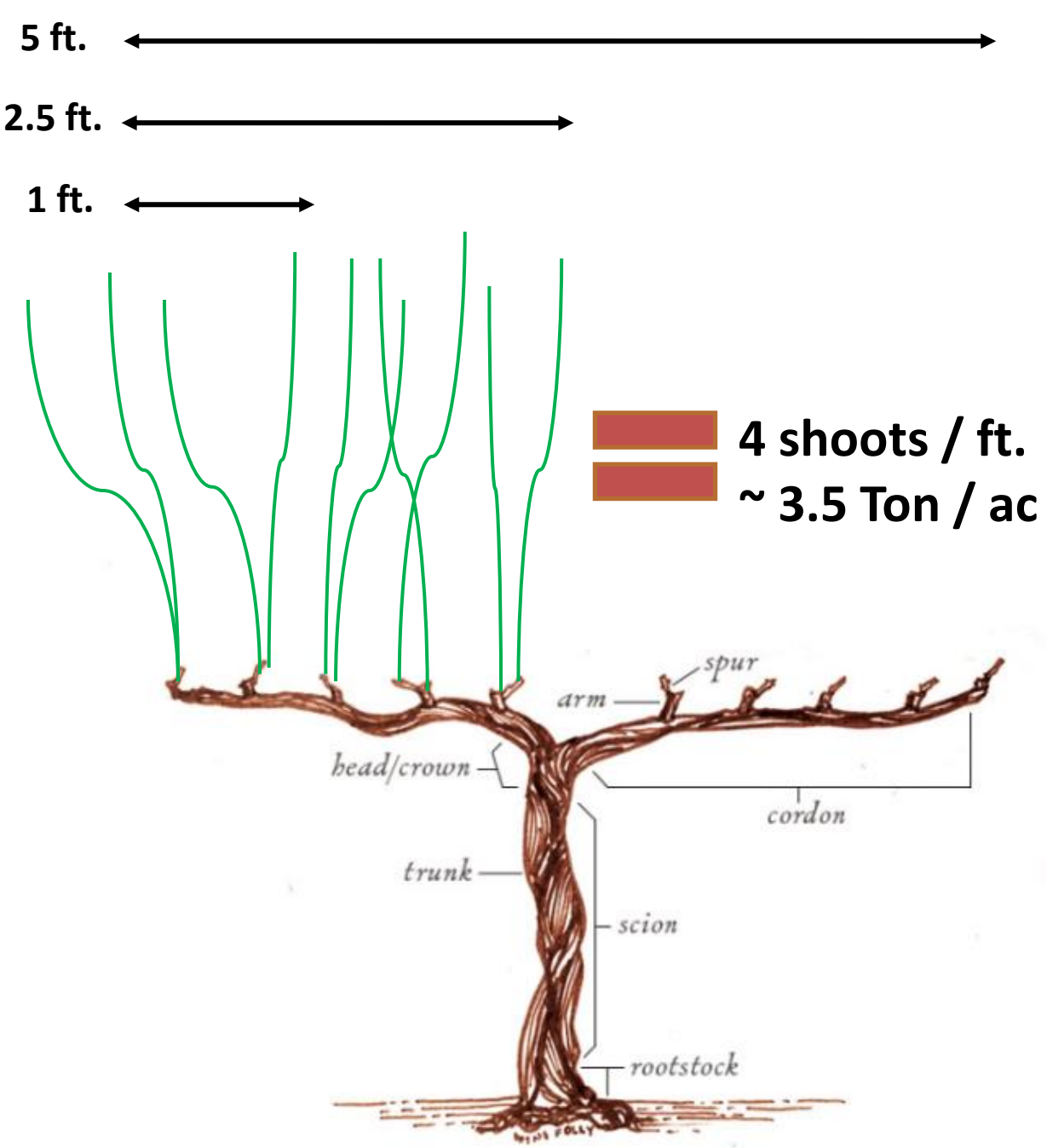
- Shoot Selection
- Shoot Positioning
  - Trellis & Wire Options
- Vineyard Floor Management
  - Cover Crops
  - Weed Management
- Nutrition
- Pest and Disease

Shoot Selection

- De-Sucker the trunk and bottom crown of the vine
- Thin shoots to your desired density
- Take pruning plan for following season into account

Shoot Thinning Based on Pruning Strategy

- **Thin shoots to 1 shoot per count bud**
- **Perform a 2nd shoot thinning pass if necessary**



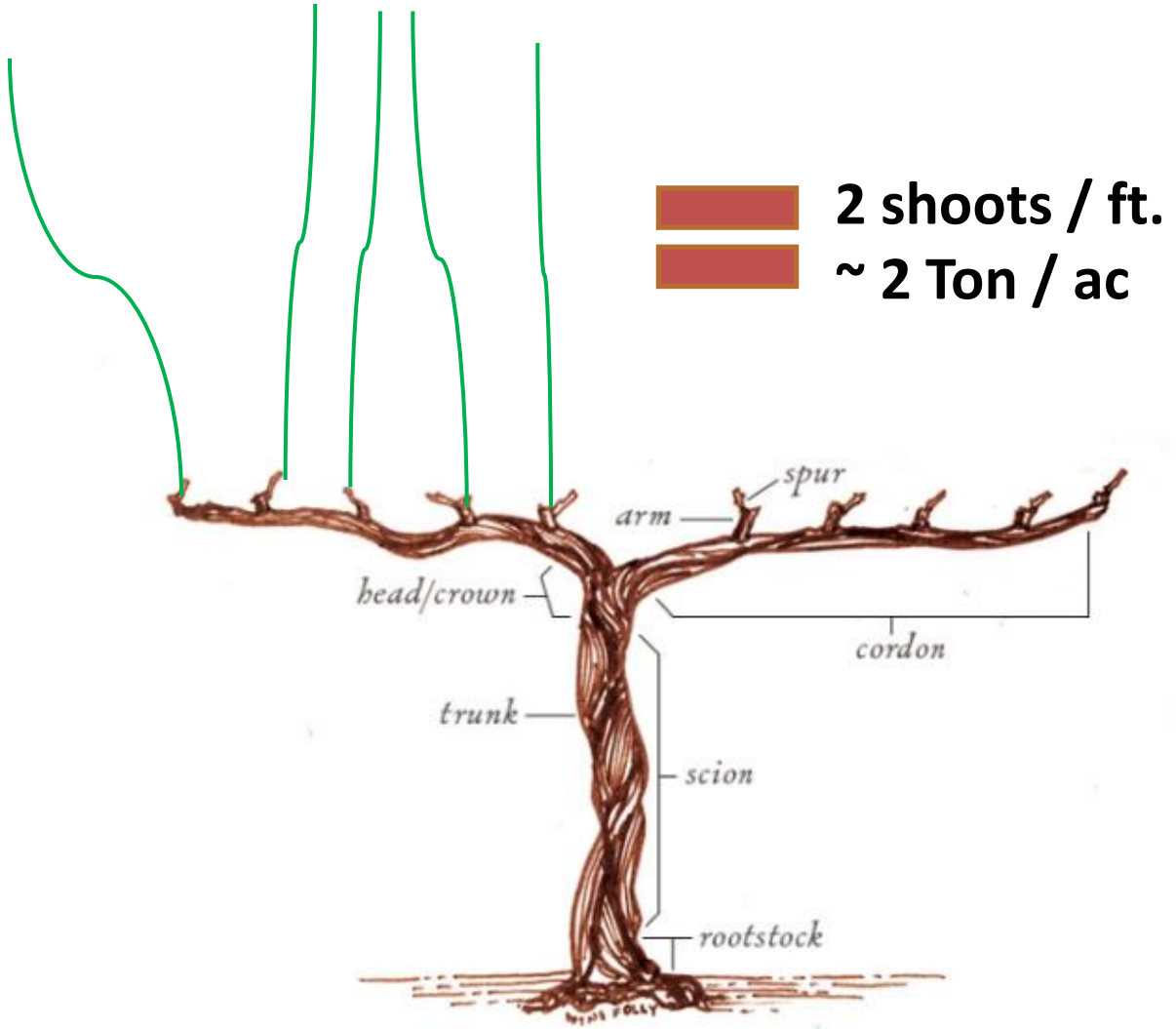
Winter Pruning

- **Control shoot density using precision pruning**
- **Prune to specific bud count to achieve desired shoot / ft.**
  - 2 buds / spur
  - Thinned to 1 shoot per bud
  - 4-6 shoots / ft. or canopy

5 ft.

2.5 ft.

1 ft.



2 shoots / ft.
~ 2 Ton / ac

Winter Pruning

- **Pruned to 1 bud / spur**

Shoot Thinning Based on Pruning Strategy

Pruned to 2 bud spurs
Thinned to 1 shoot per count bud
4 shoots / ft.
~ 3.5 Ton / ac yield

Pruned to 1 bud spurs
Thinned to 1 shoot per count bud
2 shoots / ft.
~ 2 Ton / ac yield

Shoot Thinning Based on Pruning Strategy

- **Performed in spring – best when shoots are 2- 6”**
- **Easier task when shoots are less developed**
- **Promotes growth of Fruitful shoots if performed on time**
  - Prioritize your varieties or blocks based on quality

Shoot Selection

- **Clean the base of the spurs**
- **Thin “doubles” down to 1 shoot per bud**

Shoot Selection

- **De-Sucker the base and trunk of the vines**
- **Maintain desired shoots for redevelopment plans**

Renew spur positions during shoot thinning

- **Identify spur positions that are tall or poorly positioned**
- **Maintain a renewal shoot to create a new lower position**
- **Same concept can be applied for replacing cordons**

Renew Tall Spur Positions

- Save renewal options at the base of tall positions
- If multiple tall positions exist per vine consider re-arming or cane conversion

Shoot Positioning

- **3 passes required for VSP systems**
  - Timing is critical to reduce tendrils from early latching in the wrong place
- **Moveable wire systems can make the task easier**
  - Position the 1st and 2nd sets of catch wires below the fruiting wire before budbreak
  - Move the wires into position as the shoots grow

Shoot Positioning – VSP with 3 sets of moveable catch wires

- Prepare for shoot positioning early spring
- Moving catch wires into desired position

Shoot Positioning

5 wire VSP system

VSP with 4 fixed wires & 1 moveable wire

Floor Managment

- **Cover Crop Systems**
- **Weed Management Under Vines**
  - Herbicide
  - Under vine mowing & cultivation

Cover Crop Management

- **Seeded in row middles to a prepped seed bed**
- **Annual cover for nutrition and soil building properties**
- **Perennial cover for ground cover and erosion control**
- **Blend**
  - Mustard (3lb/ac)
  - Dicon Radish (5 lb/ac)
  - Rape Seed (5 lb/ac)
  - Annual Rye (20 lb / ac)
- **Terminate with crimper or roller**

Herbicide Under vines

Pros:

- **Efficient/fast**
- **Clean undervine**

Cons:

- **Risk to vines-properly trained applicator**
- **Material Costs $$$-Supply chain issues**
- **Erosion on hillsides**

Consider narrower strips
Timing is everything

Protective Grow Tubes or Grave Stones?

Pros:

- **Tubes protect young vines and retrained vines from Herbicide and Herbivores**

Cons:

- **Greenhouse Effect**
- **Labor intensive**
- **Prevent Fungicide from being applied**
- **increase in disease susceptibility**
- **decrease vine hardiness**

Mowing Under Vine

Pros:

- **cover crops can increase competition and decrease vine vigor**
- **supports soil biology**
- **decrease erosion**

Cons:

- **requires skilled operator**
- **slow/time consuming**
- **specialized equipment**
- **not ideal for young vines or areas of low vigor/weak vines**

Undervine Cultivation

Pros:

- **Less reliance on Herbicide**
- **Great for cleaning up area with tall weeds or weeds with herbicide resistance**
- **Can mix in soil applied amendments/fertilizer**

Cons:

- **Skilled tractor operator**
- **Risk to damage vines/vineyard structures**
- **Crown Gall spread**
- **Erosion problems**

Nutrition

Soil Nutrition

- **Soil Analysis Performed Every 2-3 years in the fall or spring**
- **Tissue analysis performed every year at bloom**

Report Number: 22-104-1334
Account Number: 14435

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Waypoint ANALYTICAL
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Main 804-743-9401 ° Fax 804-271-6446
www.waypointanalytical.com

Grower: Joseph Geller

SOIL ANALYSIS REPORT

Analytical Method(s): Mehlich 3 SMP Buffer pH Loss On Ignition Water pH

Date Received: 04/14/2022 **Date Of Analysis:** 04/15/2022 **Date Of Report:** 04/20/2022

Sample ID / Field ID	Lab Number	OM	W/V	ENR	Phosphorus			Potassium	Magnesium	Calcium	Sodium	pH		Acidity	C.E.C
		% Rate	Soil Class	lbs/A	M3 ppm Rate	ppm Rate	ppm Rate	K ppm Rate	Mg ppm Rate	Ca ppm Rate	Na ppm Rate	Soil pH	Buffer Index	H meq/100g	meq/100g
B-MER	06475	3.6 M		117	3 VL			54 L	101 H	306 L	14 VL	5.6	6.85	0.8	3.4
D-CAS	06476	3.4 M		113	15 L			77 M	99 VH	335 M	13 VL	6.1	6.89	0.4	3.2
A-PV	06477	4.0 M		125	9 VL			55 L	99 VH	260 L	13 VL	5.4	6.84	0.9	3.2
A-CASB	06478	3.6 M		118	29 L			94 H	65 H	179 VL	15 L	4.9	6.79	1.4	3.1
D-PV	06480	3.4 M		113	15 L			68 M	85 H	364 M	13 VL	6.0	6.88	0.5	3.3

Sample ID / Field ID	Percent Base Saturation					Nitrate	Sulfur	Zinc	Manganese	Iron	Copper	Boron	Soluble Salts		
	K %	Mg %	Ca %	Na %	H %	NO_3 N ppm Rate	S ppm Rate	Zn ppm Rate	Mn ppm Rate	Fe ppm Rate	Cu ppm Rate	B ppm Rate	SS ms/cm Rate		
B-MER	4.1	24.8	45.0	1.8	23.5		52 VH	3.2 M	16 M	28 H	2.2 H	0.2 VL			
D-CAS	6.2	25.8	52.3	1.8	12.5		27 H	3.3 M	12 M	43 H	4.6 VH	0.2 VL			
A-PV	4.4	25.8	40.6	1.8	28.1		72 VH	3.7 H	2 VL	35 H	2.5 H	0.2 VL			
A-CASB	7.8	17.5	28.9	2.1	45.2		70 VH	3.8 H	5 L	45 H	1.9 H	0.2 VL			
D-PV	5.3	21.5	55.2	1.7	15.2		36 VH	2.5 M	7 L	46 H	4.7 VH	0.2 VL			

Values on this report represent the plant available nutrients in the soil. Rating after each value: VL (Very Low), L (Low), M (Medium), H (High), VH (Very High). ENR - Estimated Nitrogen Release. C.E.C. - Cation Exchange Capacity.

Explanation of symbols: % (percent), ppm (parts per million), lbs/A (pounds per acre), ms/cm (milli-mhos per centimeter), meq/100g (milli-equivalent per 100 grams). Conversions: ppm x 2 = lbs/A, Soluble Salts ms/cm x 640 = ppm.

This report applies to sample(s) tested. Samples are retained a maximum of thirty days after testing.

Analysis prepared by: Waypoint Analytical Virginia, Inc.

by: Pauric Mc Groary

Pauric Mc Groary Ph.D., CPAg

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SOIL FERTILITY RECOMMENDATIONS

Sample ID Field ID	Intended Crop	Yield Goal Tons	Lime Tons/A	Nitrogen N lb/A	Phosphate P_2O_5 lb/A	Potash K_2O lb/A	Magnesium Mg lb/A	Sulfur S lb/A	Zinc Zn lb/A	Manganese Mn lb/A	Iron Fe lb/A	Copper Cu lb/A	Boron B lb/A
B-MER	Grapes-Vinifera	4	1.0	**	140	0	0	0	1.4	2	0	0	3.0
D-CAS	Grapes-Vinifera	4	0.8	**	140	0	0	12	1.4	2	0	0	3.0
A-PV	Grapes-Vinifera	4	1.3	**	140	0	0	0	1.2	4	0	0	3.0
A-CASB	Grapes-Vinifera	4	1.5	**	104	0	0	0	1.1	3	0	0	3.0
D-PV	Grapes-Vinifera	4	0.8	**	140	0	0	0	1.8	3	0	0	3.0

Comments:
"The recommendations are based on research data and experience, but NO GUARANTEE or WARRANTY expressed or implied, concerning crop performance is made."

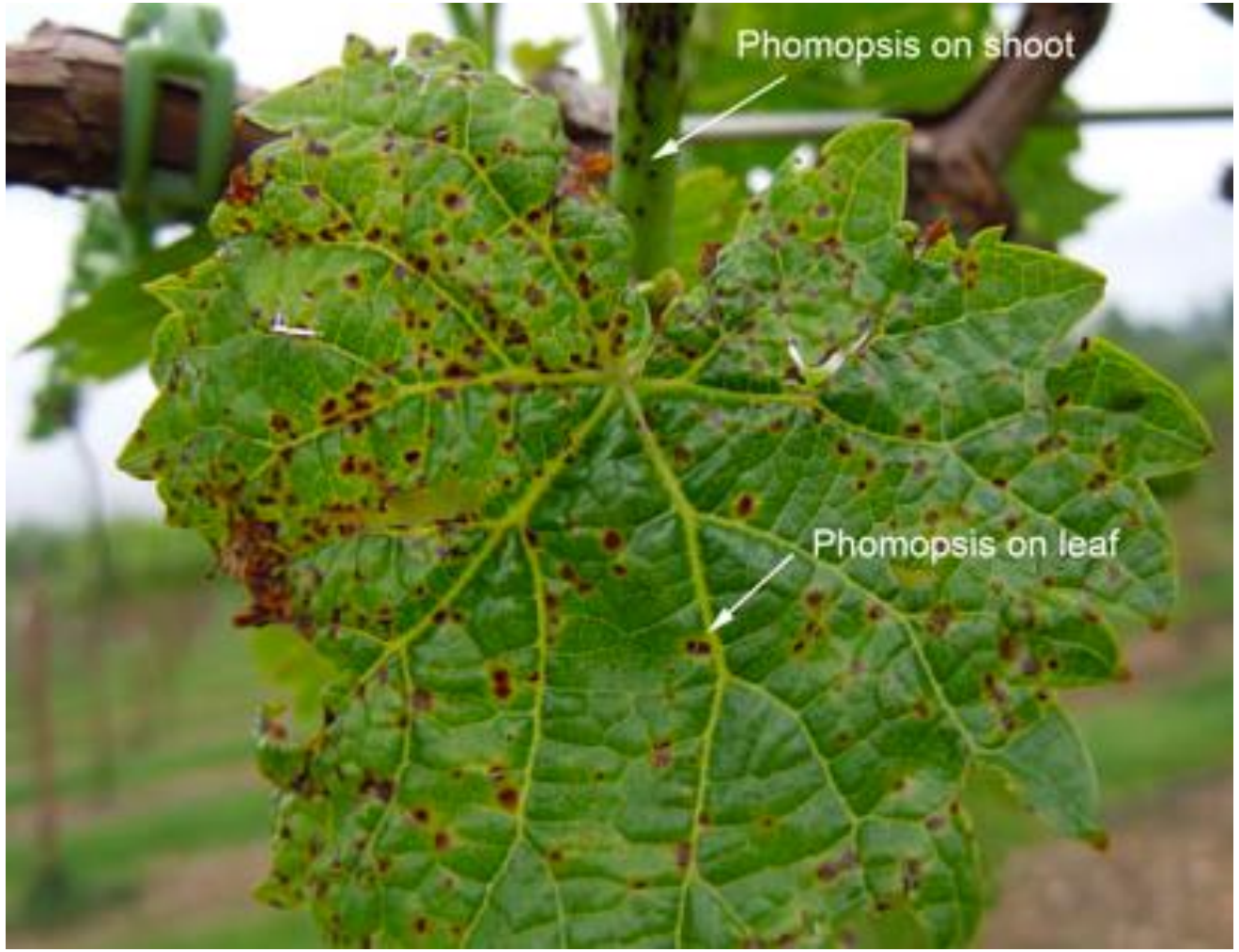
Pauric Mc Groary

Pauric Mc Groary Ph.D., CPAg

Foliar Nutrition

Pest and Disease

Phomopsis



Phomopsis

- Mancozeb (backbone of early season Phomopsis prevention)
- Ziram (to stretch out Mancozeb or if getting close to 66 day PHI…not best Phomopsis material)
- Captan (best saved for late season but could sub for Mancozeb for a rotation if you want to stretch out Mancozeb)
- Cevya
- Topsin
- Pristine (expensive material for phomopsis)
- Lime sulfur in the late winter can help some…consider if you have phomopsis problem areas

Powdery Mildew

Powdery Mildew

- Sulfur (backbone of every vinifera program but might not be the best for Hybrids
- QoI's(strobis) FRAC 11 (Abound, Flint, Pristine)
- DMIs FRAC 3 (Rally, Elite, Cevya, Rhyme, Mettle, tebustar)
- SDHI FRAC 7 (Approvia, Luna Experience)
  -best used at bloom
- Quentec
- Torino (good if you need to get a crew into block ASAP
- Vivando or Prolivo
- Kenja 400SC
- Gatten
- Horticultural oils
  -good at stopping active infections at high GPA rates
  -doesn't play well with other products and not recommended for NC as it slows fruit maturing

Downy Mildew

Downy Mildew

- Mancozeb (Manzate Max, Dithane) backbone of program early season
  -19 lbs of active ingredient per season
  -66 Day PHI
- Ziram-provides suppression
- Captan
  -Save for late season
- Copper
  -poor mixing partner
- Ridomil Gold MZ Ridomil Gold Copper
  -not to be used early season unless pressure very high
- Phosphorus Acid (phostrol,prophyt, Reveille) Use sparingly early season if there is a major rain event….try to save for late season
- Ranman
- Zampro
- Revus Top- Could be resistance issues
- Abound and Pristine (FRAC 11)...could be resistance issues
- Aliette (expensive material)

Black Rot

Black Rot

- Mancozeb (Dithane,Manzate Max) best protective and backbone of early spring spray program
- Ziram (can sub in for Mancozeb if you want to stretch out Mancozeb or getting too close to 66 PHI window)
- Captan (less effective) and should be saved for after 66 day PHI window closes for Mancozeb
- DMI FRAC 3s (Rally, Tebuconazole, Mettle) Highly effective
- QoI's FRAC 11s (Abound, Sovran) also highly effective

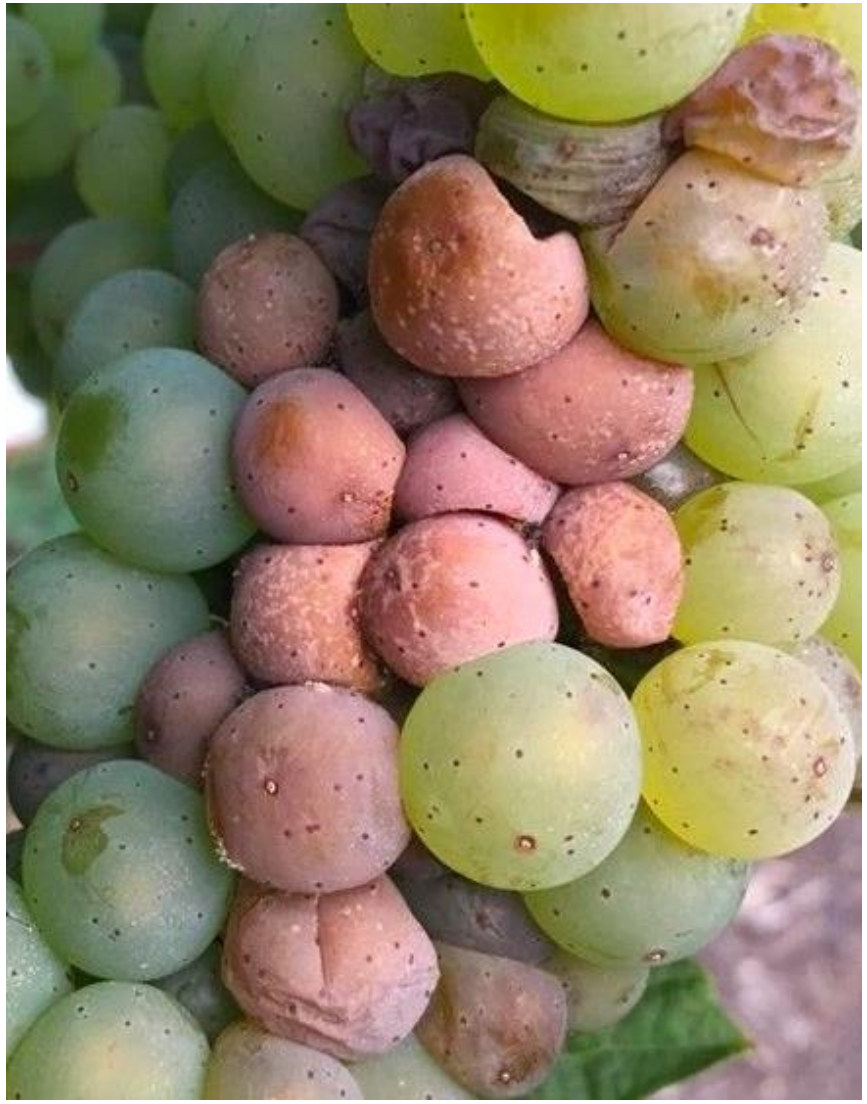
Anthracnose

Anthracnose

Many of the materials you apply for Phomopsis, Black rot and Downy Mildew are going to protect against Anthracnose

- Mancozeb will be stable of Anthracnose program
- Captan also has efficacy
- Most FRAC 3s will offer protection. Use minimum to avoid resistance issues
- FRAC 11s offer protection. Use a minimum to avoid resistance issues.
- Quadris Top and Pristine have great efficacy

Botrytis and Rot Complexes



Botrytis and Sour Rot Complexes

Botrytis Bloom Spray options:

- Switch
- Luna Experience
- Miravus Prime
- Rovral
- Elevate
- Vangard
- Inspire Super
- Endura (Bascalid)
- Kenja 400SC (isofetamid)
- Pristine
- Scala
- Intuity

Switch and Miravus Prime Only products labeled for Sour Rot but doubtful of efficacy

Canopy Management is key to success

Mealybugs

- First Active April and May
- Feed on base of young shoots or pedicels of grape clusters
- Treatment includes:
  imidacloprid (Admire pro)
  Dinotefuran (Venom or Scorpion 35SL)
  clothianidin (Belay)
  acetamiprid (Assail 30SG)
  buprofezin (Aplaud 70DF)
  Spirotetramat (Movento)
  Horticultural oil
  Prev-Am

Climbing Cutworm

- monitor in early Spring for damaged buds and young shoots
- If damage is found you may need to scout at night to see if the population is of concern
- Materials for control include:
  methoxyfenozide (Intrepid 2F or Troubador)
  IRAC 3A including beta-cyfluthrin(Baythroid)
  Bifenthrin (Brigade)
  Carbaryl (IRAC 1A)
  Altacor (IRAC 28)
  Dipel DF or other BT products

May need to spray at night for best control

Grape Berry Moth

- Monitor with male pheromone traps and sticky cards
- monitoring at night if concerned with density
- First generation shows up pre bloom to bloom
- Larvae feed on blossoms or puncture and feed on berries and can be identified by webbing in and around flower/cluster or holes left in berries
- Adults lay eggs on individual grapes blossoms and stems

- Control includes Intrepid 2F, Entrust SC, Delegate WG, Altacore 35WDG, Avaunt 30DG

Pierce's Disease Prevention

- Monitor for Vectors
- IRAC 4A Insecticide for systemic protection foliar or soil applied
- Imidacloprid, dinotefuran, acetamiprid

Summer time flagging of vines and roguing important for reducing spring transmission