BUD DENSITY AND TRELLIS STRUCTURE EFFECTS ON CHAMBOURCIN

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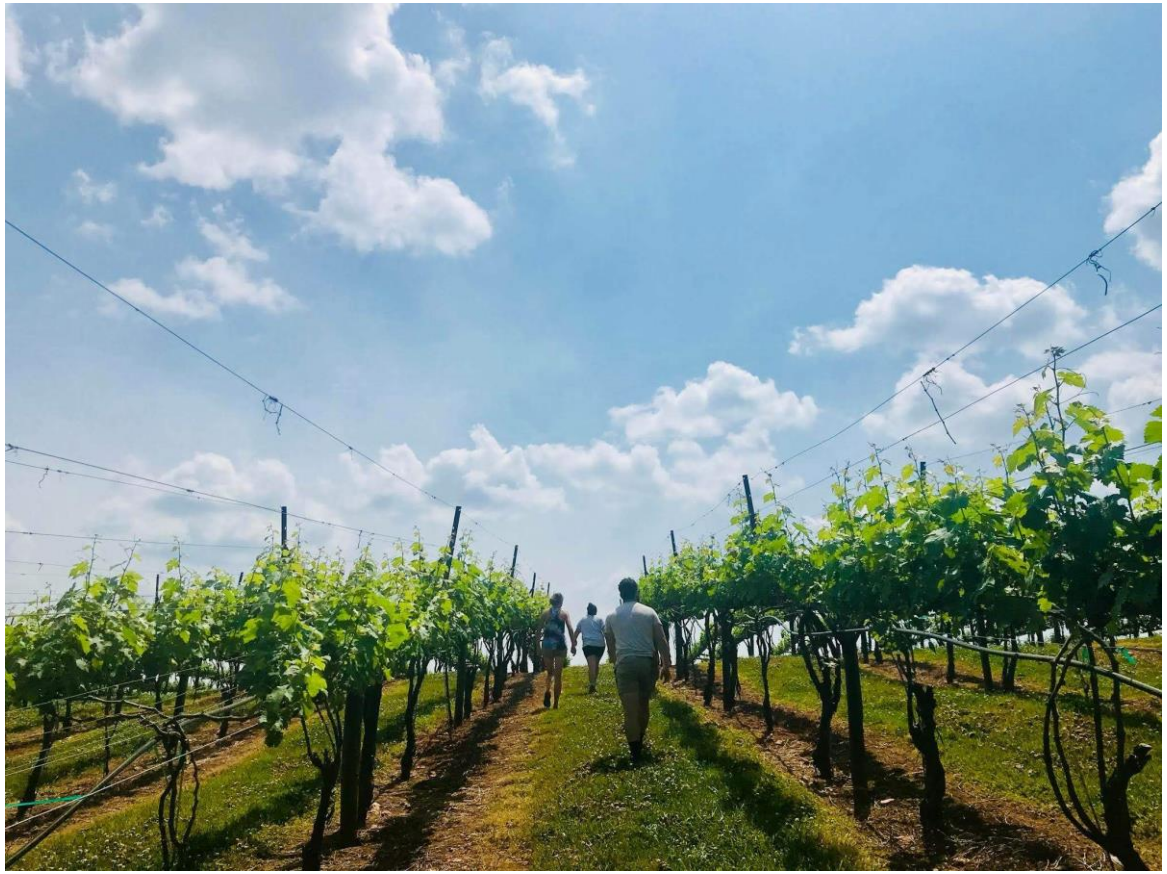
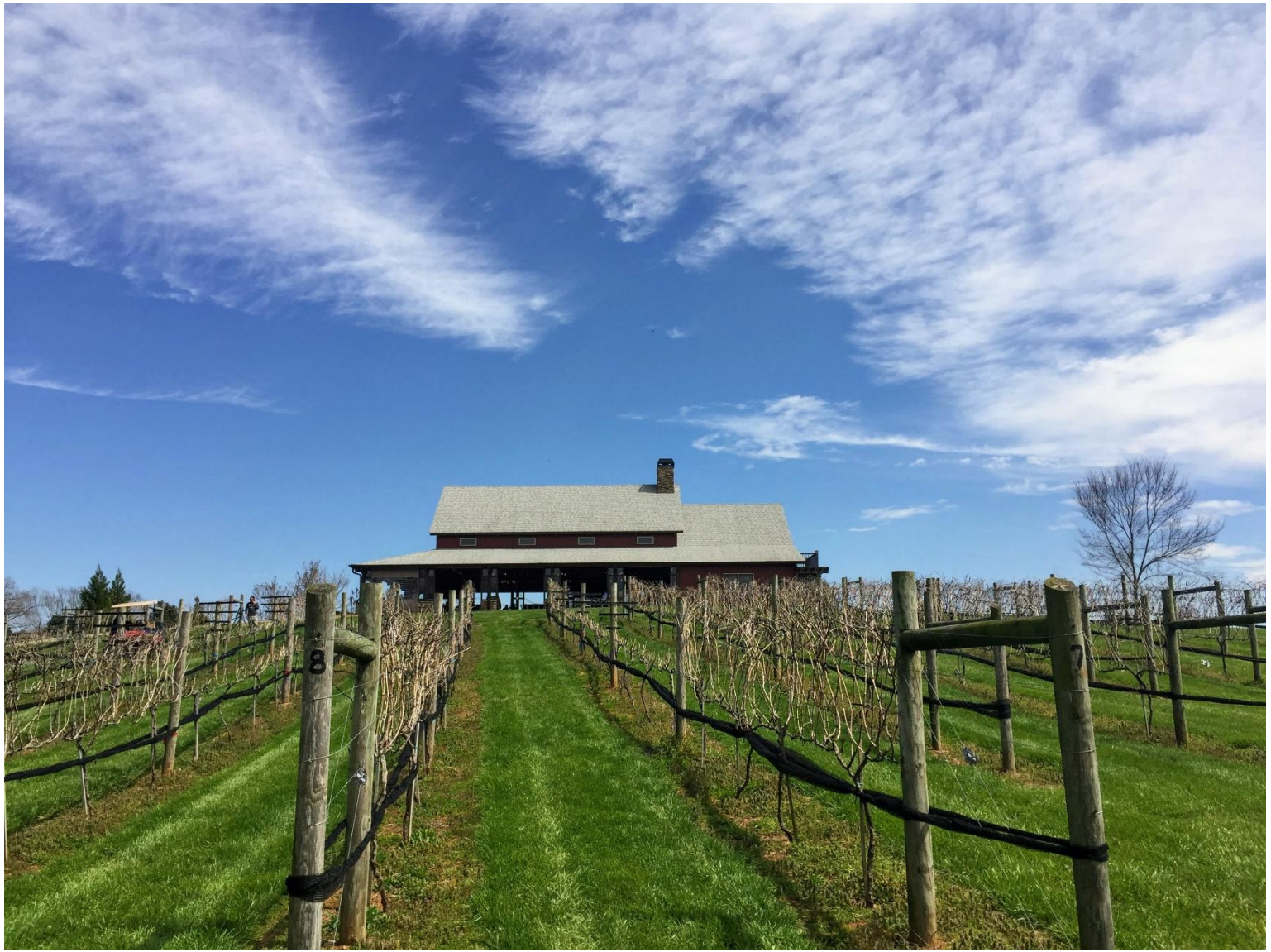


OVERVIEW

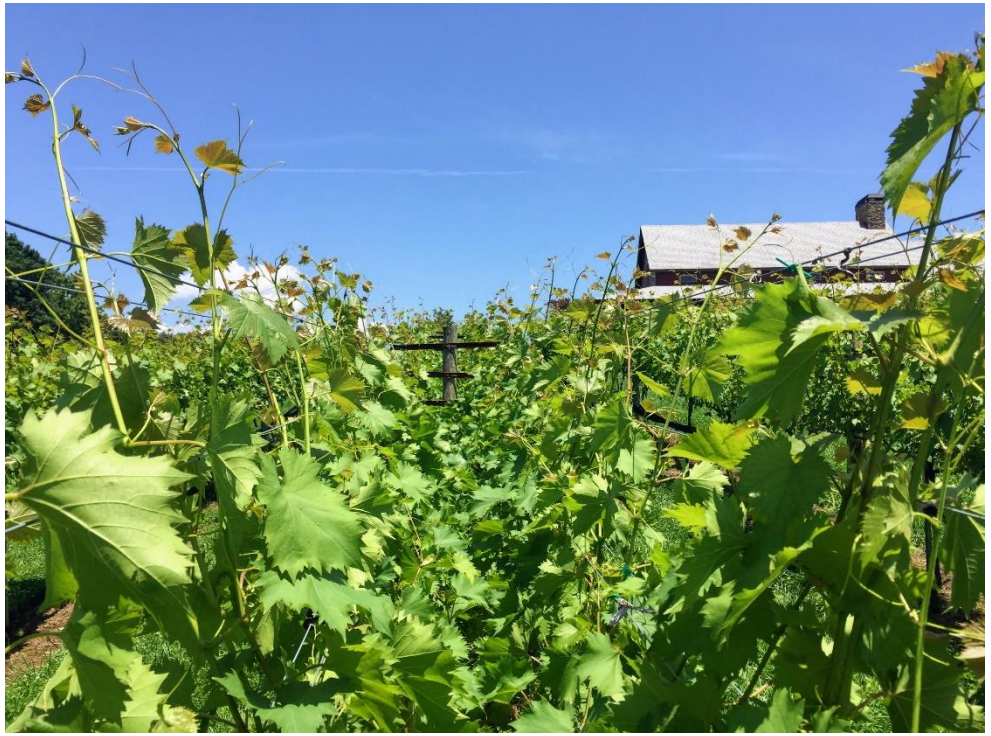
1) Goals of the Project
2) Description of Treatments
3) Logic Behind the Retrofit
4) Chambourcin
5) Preliminary Results
6) Conclusion



GOALS

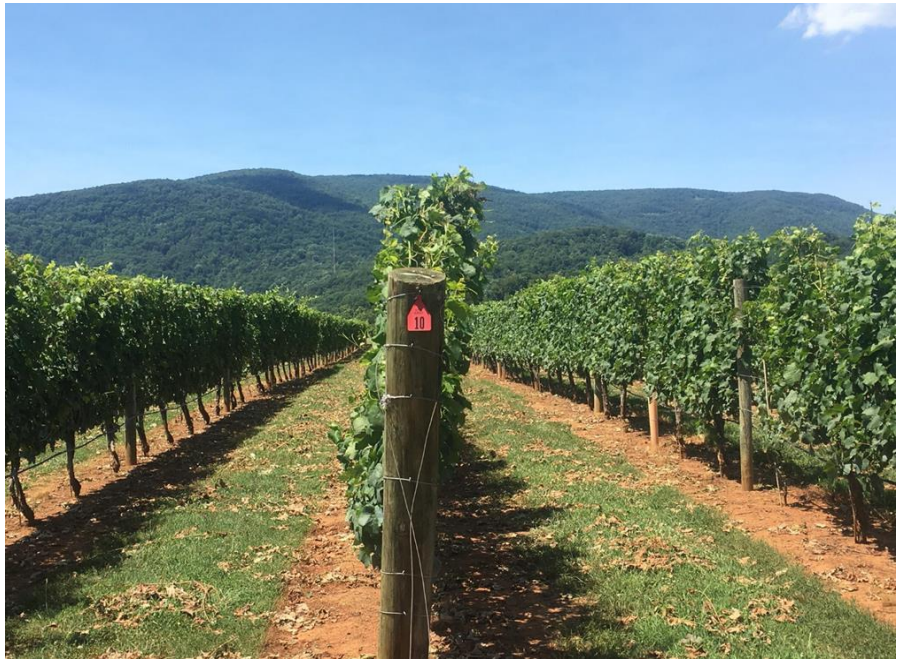
1) Retrofit a low bilateral cordon VSP system:
   - Trellising
   - Pruning
2) Increase Crop Production
3) Maintain or Improve Wine Quality

TREATMENTS



Trellising

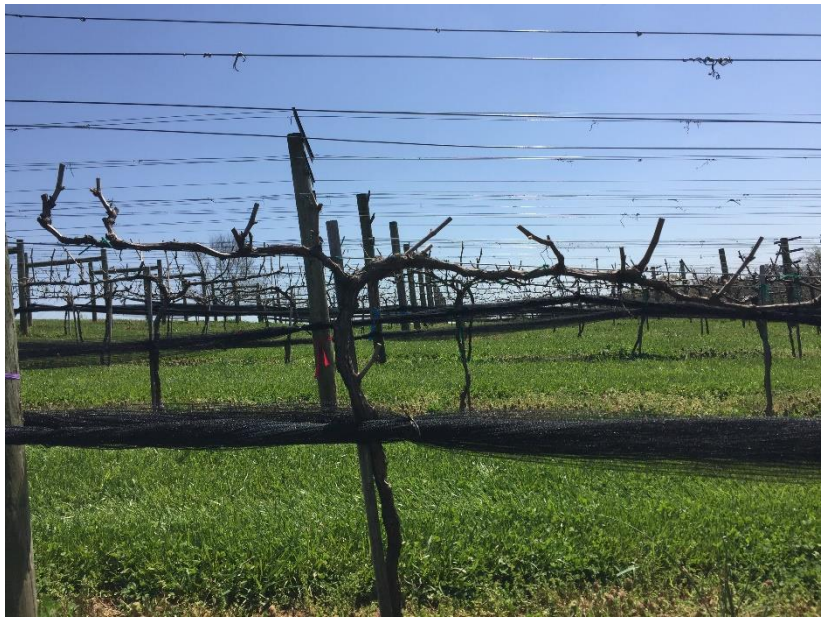
- Divided Vertical Shoot Positioned (DVSP)
- Tight (VSP)



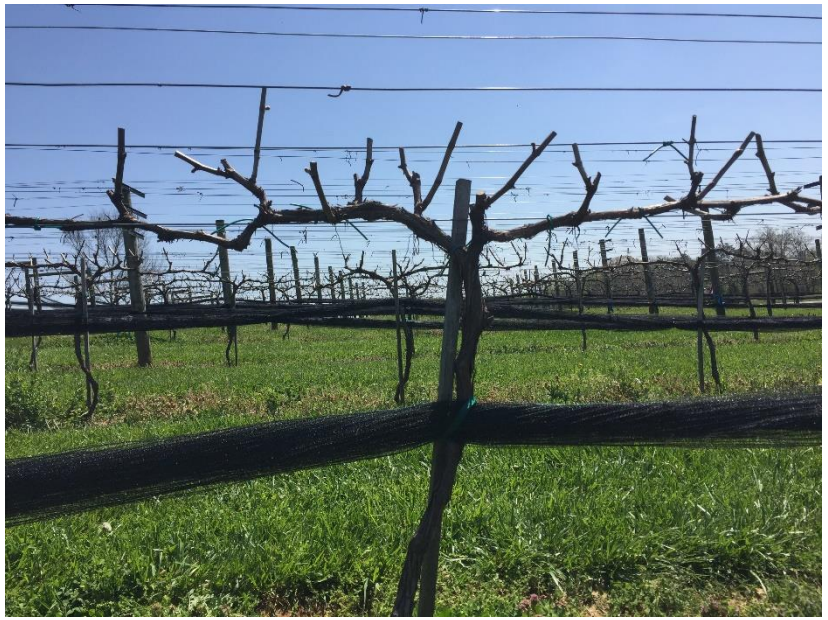
Pruning

- All were spur pruned
  - 4 buds/foot of row
  - 6 buds/foot of row
  - 8 buds/foot of row

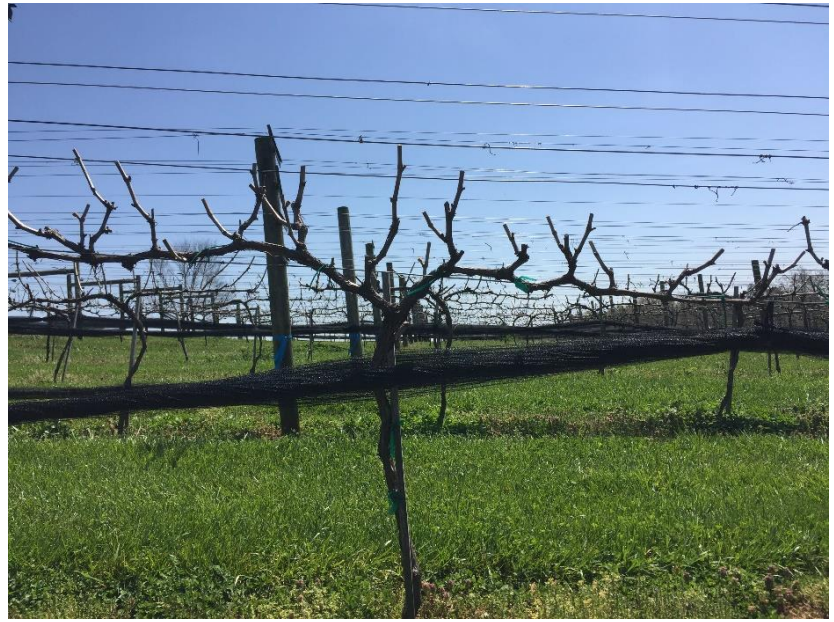
PRUNING TREATMENTS



Low Density (Pruned to 4 buds/foot)
Actually ~4 shoots/foot



Medium Density (Pruned to 6 buds/foot)
Actually ~5 shoots/foot



High Density (Pruned to 8 buds/foot)
Actually ~6 shoots/foot

QUICK VIDEO OVERVIEW OF PROJECT

https://www.youtube.com/watch?v=VS_895DyRCU

CHAMBOURCIN

Relatively loose clusters, large berries, with thick skins

- Tends to have less rot even at higher cluster densities

Tends to have a heavier crop with a little higher acidity compared to *V. vinifera* cultivars

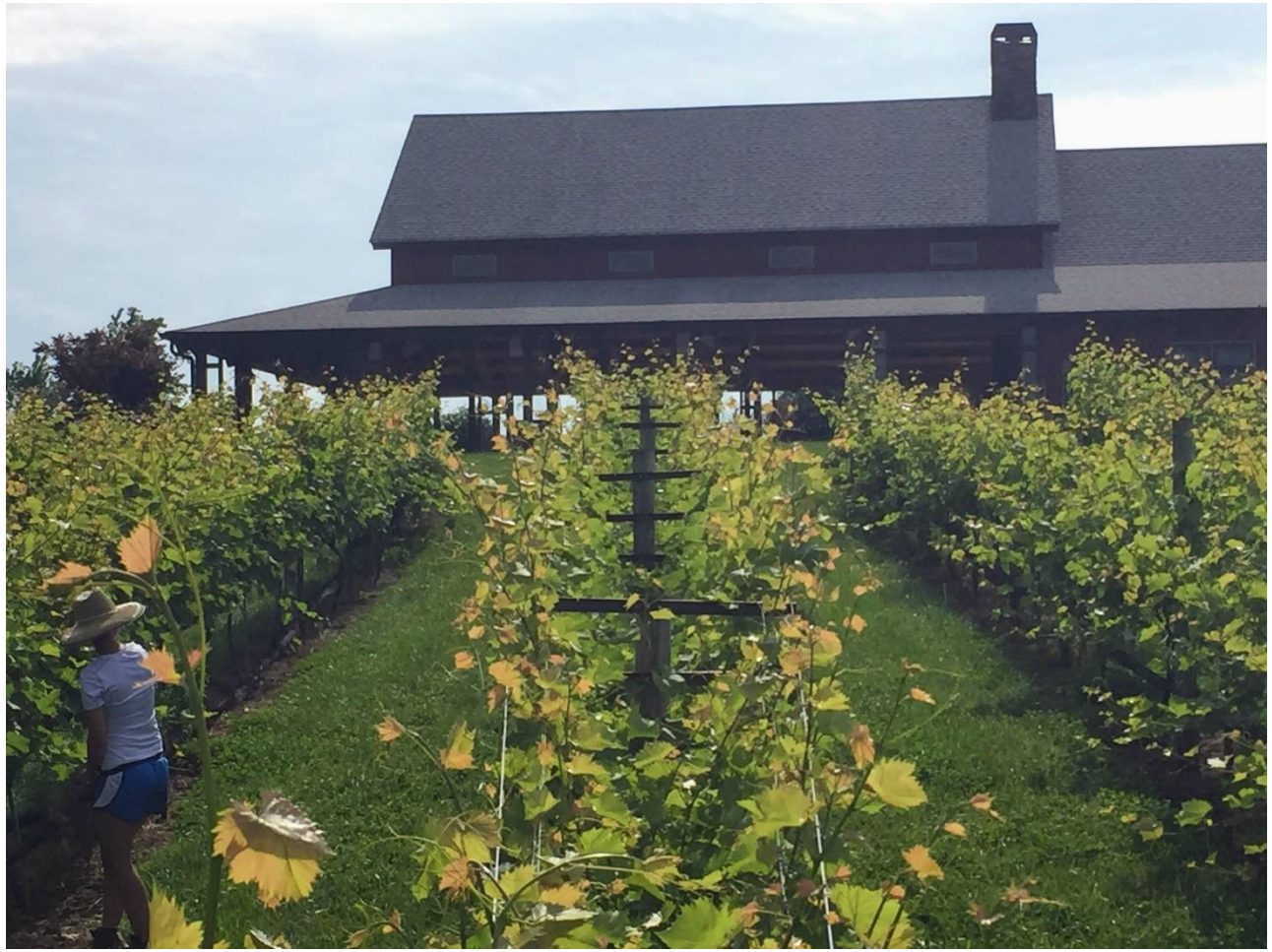
Important East Coast cultivar

HYPOTHESIS

DVSP will increase Brix in the harvested fruit

Leaving more buds per foot of row will increase crop yield

- Fruit maturity will be advanced in DVSP compared to VSP



PRELIMINARY DATA: FRUIT ZONE SUNLIGHT EXPOSURE

Treatment	2018	
	Leaf Area Index	Effective Leaf Area Index
Pruning		
High	1.75	1.44
Medium	1.64	1.38
Low	1.65	1.35
Trellising		
DVSP	2.07a	1.90a
VSP	1.29b	0.88b

PRELIMINARY DATA: MID CANOPY PQA

Leaf Layer Number – Number of leaves contacted in the average PQA reading

Leaf Exposure Layer – Number of shading layers between leaves and the nearest boundary

Treatment	2018	
	Leaf Layer Number	Leaf Exposure Layer
Pruning		
High	2.64a	0.30a
Medium	2.42b	0.25ab
Low	2.21c	0.21b
Trellising		
DVSP	2.04b	0.19b
VSP	2.81a	0.32a

PRIMARY FRUIT COMPOSITION

Treatment	2018		
	Soluble Solids (°Brix)	pH	TA (g/L)
Pruning			
High	20.23	3.75	4.86
Medium	20.15	3.72	4.97
Low	20.41	3.73	4.68
Trellising			
DVSP	20.18	3.71b	4.95a
VSP	20.34	3.76a	4.72b

PRELIMINARY YIELD DATA

2018						
Treatment	Crop yield (tons/acre)	Cluster number (per vine)	Cluster weight (g)	Average Berry Weight (g)	Berry # /cluster	Crop Load
Pruning						
High	7.91	51.8a	170.7b	2.57	66.22b	9.21
Medium	7.79	49.8a	175.6b	2.58	68.31b	8.66
Low	7.07	39.6b	200.5a	2.58	77.58a	8.40
Trellising						
DVSP	8.32a	47.9	196.7a	2.61	75.46a	9.74a
VSP	6.85b	46.2	167.9b	2.55	65.95b	7.76b

CONCLUSIONS

DVSP increased the effective leaf area index.

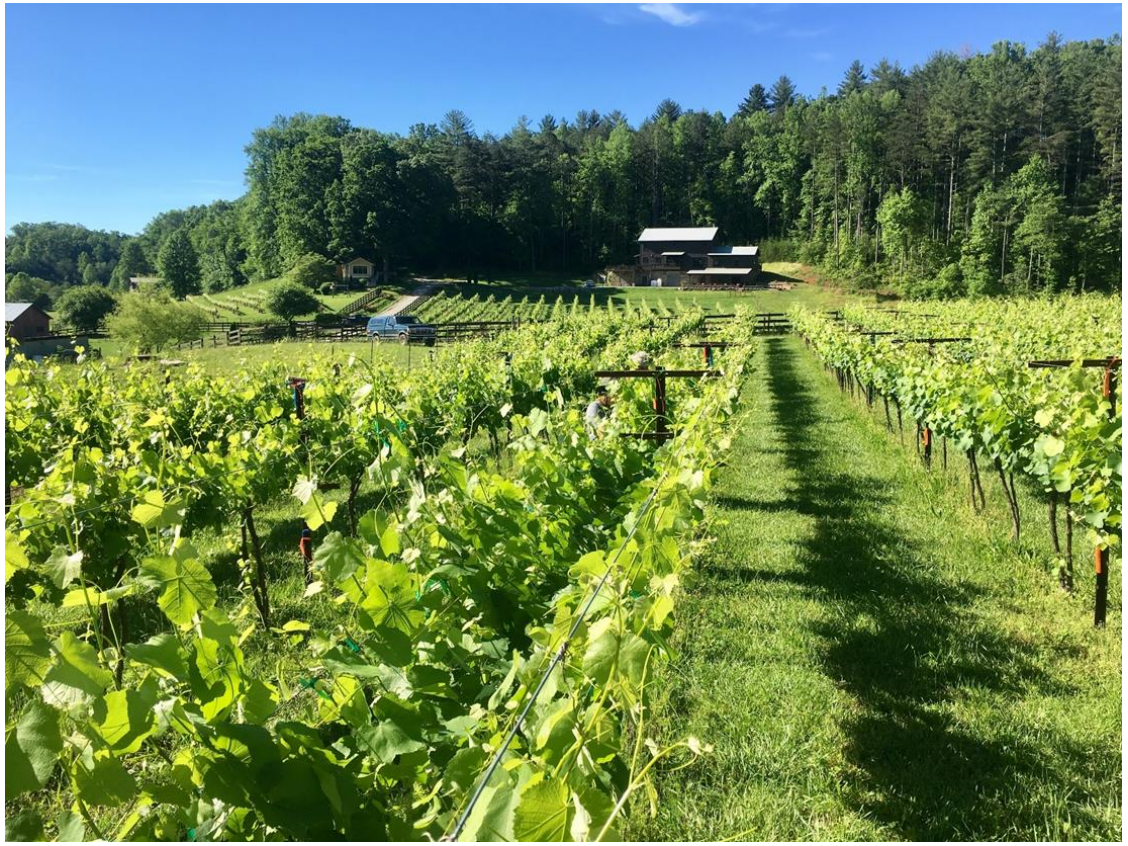
- Could help explain the increase in crop

DVSP increased the amount of harvested fruit by an average of 21%

- No significant increase in harvested fruits in the different pruning densities

DVSP increased the amount of titratable acidity

- Increased in berries per cluster increasing shading?



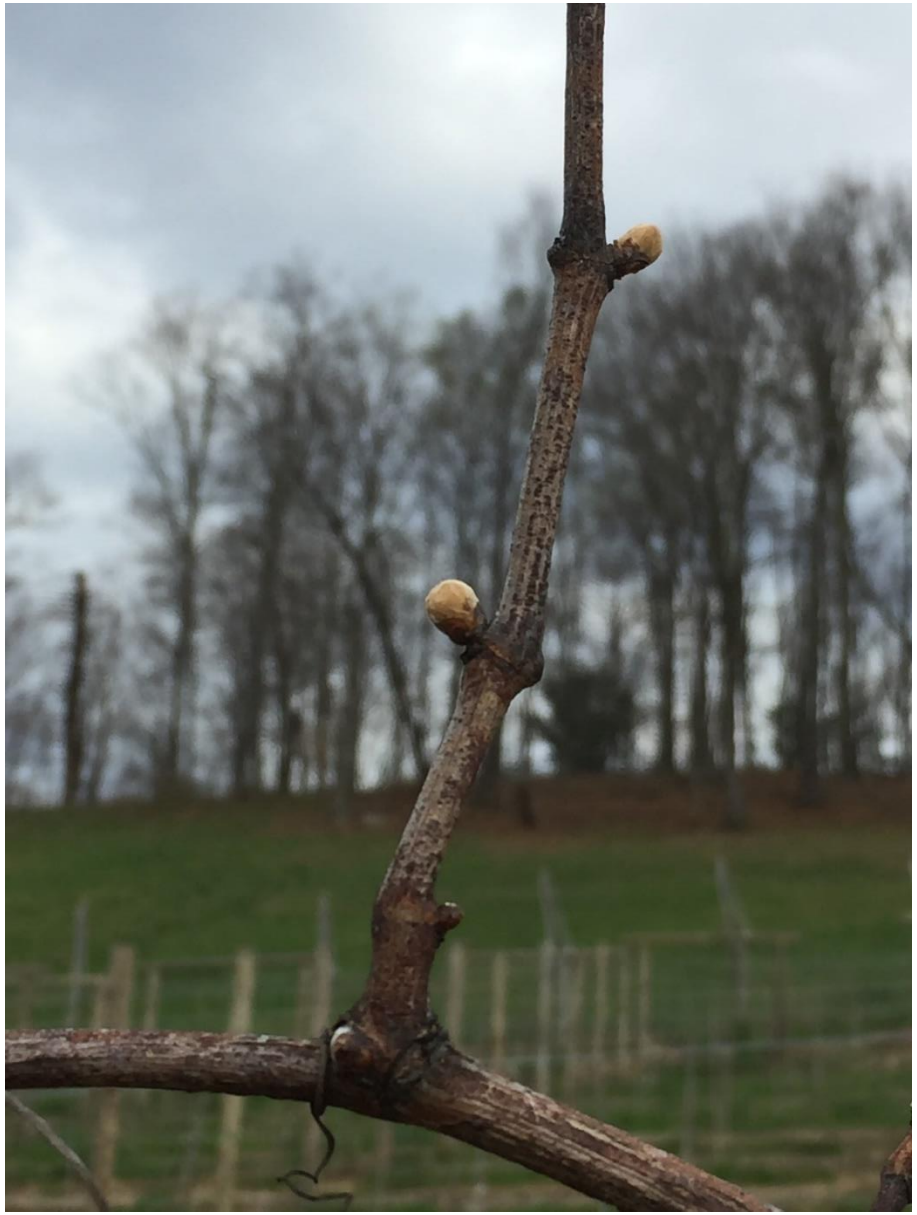
TO BE CONTINUED…

Differential sampling to determine cause of TA increase

Perennial sustainability of the vineyard

Investigation into why the increase in buds did not result in a significant increase in yield

- Fruit set may be limited by the source during bloom



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CeNita Vineyard

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- Clark MacAllister
- Annie Vogel
- Alex Cameli, Zac Bennett, and Emily Currens

THANK YOU!

Questions?