Estimated Production Costs, Gross Revenues, and Returns per Acre for Muscadines Grapes Grown for the Wine and Juice Markets Geneva Double Curtain Trellis System with Drip Irrigation

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This budget presents the estimated costs of producing and harvesting muscadine grapes for the wine and juice markets in North Carolina, an investment analysis of muscadine grape production, and the effects of varying wholesale prices and yields on returns to land and management. The budget was developed for a representative 10 acre grape vineyard assuming a Geneva Double Curtain (GDC) trellis and a drip irrigation system. It was also assumed that the management of the vineyard would be near optimal and that all recommended practices would be followed. This information can be useful for farmers considering starting a new muscadine grape vineyard or expanding an existing operation. Mention of a product or vendor does not constitute a guarantee or warranty of the product, nor does it imply recommendation of one product over another. Other products may also be suitable depending on soils, weather conditions, farm history, and nest pressures

Budget Contents

Monthly and annual cost estimates by operation

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Investment Analysis

Estimated Costs and Returns for Varying Yields and Wholesale Prices

Estimated Production Costs per Acre for Muscadine Grapes Grown for the Wine and Juice Markets, Geneva Double Curtain Trellis System with Drip Irrigation Site Preparation

		Equipment		Labor	Total	Your
Month	Type of Operation	Costs	Costs	Costs	Costs	Costs
August						
August	Attend Grower Meetings		5.00	8.45	13.45	
	Apply Herbicide	3.43	0.00	5.28	8.71	
	glyphosate	00	17.50	0.20	17.50	
Total Aug	~	\$3.43	\$22.50	\$13.73	\$39.65	
Novembe		,	,	,	,	
	Plow Field	12.31		13.94	26.25	
	Disc Field	5.31		6.97	12.28	
	Order & Plant cover crop	2.93	50.00	4.44	57.36	
	Custom Applied Nutrients	2.93		4.44	7.36	
	Lime		77.00		77.00	
	Triple Superphosphate		20.40		20.40	
	Order plants		500.50	2.64	503.14	
Total Nov	rember	23.48	647.90	32.42	703.80	
Decembe	r					
	Order trellis supplies*		3,092.48	10.56	3,103.04	
Total Dec	ember	0.00	3,092.48	10.56	3,103.04	
Annual Ad	Iministrative Costs					
	Real Estate Taxes		0.00		0.00_	
	Management Fee		0.00		0.00_	
	Net Land Rent		0.00		0.00_	
	Miscellaneous		20.00		20.00	
	Overhead (Utilities, legal fees, etc)		15.00		15.00_	
Total Ann	nual Administrative Costs	0.00	35.00	0.00	35.00	
Seasonal						
	1/2 Ton Pick-up	16.48		25.34	41.82	
	Operating Capital		0.00		0.00_	
Total Sea	sonal Costs	16.48	0.00	25.34	41.82	
TOTAL P	REPARATION COSTS	43.38	3,797.88	82.05	3,923.31_	

Estimated Materials Costs for a Genevia Double Curtain Trellis for a 10-Acre Vineyard

	Rate/		Cost per	Total	Your
Trellis Materials	Acre	Unit	Unit	Cost	Cost
Treated 4" x 8' Posts	1820	ea	5.00	9,100.00	
Treated 6" x 8' Posts (end brace posts)	220	ea	7.00	1,540.00	
Treated 6" x 6 1/2' Posts (inside brace posts)	220	ea	9.40	2,068.00	
Treated 4" x 4" x 6' Timbers	220	ea	5.00	1,100.00	
Wire, 100-pound rolls of # 9 galvanized	45	roll	74.00	3,330.00	
Metalic crossarms	1820	ea	6.50	11,830.00	
Spreader 2"x4"x45"	220	ea	2.00	440.00	
3/8 x 8" galvanized bolt	1820	ea	0.80	1,456.00	
3/16" bolts	220	ea	0.24	52.80	
Staples	10	lb	0.80	8.00	
Total Trellis Materials Cost				\$30.924.80	

Estimated Construction Costs for a Genevia Double Trellis for a 10-Acre Vineyard

	Equipment	Materials	La	bor	Total	Your
Operation	Costs	Costs	Hours	Costs	Costs	Costs
Materials Cost		30.924.80			30,924.80	
Mark rows and post locations		30,924.00	40	330.00	330.00	
Distribute posts	297.84		35	288.75	586.59	
Drive line posts (2 workers @ 3min/post)	900.86		180	1.485.00	2,385.86	
Auger and set end posts (2 workers @ 5 min/post)	301.89		73	602.25	904.14	
Construct Trellis	00.100		500	4,125.00	4,125.00	
Total Costs	\$1,500.59	\$30,924.80	828	\$6,831.00	\$39,256.39	

Estimated Production Costs per Acre for Muscadine Grapes Grown for the Wine and Juice Markets, Geneva Double Curtain Trellis System with Drip Irrigation First Year: Planting and Trellis Construction

Month	Type of Operation	Equipment Costs	Materials Costs	Labor Costs	Total Costs	Your Costs
	: yes or sportmen					
March		450.00				
	Build Trellis	150.06		683.10	833.16_	
	Auger vine holes¹	8.40		230.63	239.03 _ 12.67	
Total Marc	Irrigation system preparation	158.46	0.00	12.67 926.40	1,084.86	
April	an en	130.40	0.00	920.40	1,004.00	
, tpili	Order Prunning Equipment			10.56	10.56	
	Plant vines (2 min/vine)			63.36	63.36	
Total April		0.00	0.00	73.92	73.92	
May		0.00	0.00	70.02	70.02	
	Order & Replant ²		24.75	10.56	35.31	
	Growth tube installation		116.48	36.96	153.44	
	Irrigate	6.78		6.34	13.12	
	Fertilize	4.12		6.34	10.46	
	10-10-10		6.54		6.54	
	Apply Herbicide	3.42		5.28	8.70	
	flumioxazin (Chateau)		37.50		37.50	
	Train/Prune (16 min/vine)	0.00		506.88	506.88	
	Mow alleys	5.59		6.34	11.93	
Total May		19.92	185.27	578.69	783.88	
June					_	
	Apply Herbicide	3.42		5.28	8.70	
	flumioxazin + paraquat		50.70		50.70	
	Irrigate	6.78		6.34	13.12	
	Fertilize	4.12		6.34	10.46	
	10-10-10		6.54		6.54	
	Train/Prune (8 min/vine)	0.00		253.44	253.44	
	Mow alleys (2X)	11.19		12.67	23.86	
Total June		25.52	57.24	284.06	366.82	
July						
•	Irrigate	6.78		6.34	13.12	
	Fertilize	4.12		6.34	10.46	
	10-10-10		6.54		6.54	
	Apply Insecticide	3.42		5.28	8.70	
	chlorpyrifos (Lorsban 4E)		9.00		9.00	
	Train/Prune (8 min/vine)	0.00		253.44	253.44	
	Mow alleys (2X)	11.19		12.67	23.86	
Total July		25.52	15.54	284.06	325.12	
August						
	Attend Grower Meetings		5.00	8.45	13.45_	
	Apply Herbicide	3.42		5.28	8.70_	
	sethoxydim (Poast 1.5 EC)		17.06		17.06	
	Irrigate	6.78		6.34	13.12	
	Mow alleys	5.59		6.34	11.93	
Total Augu	ust	15.80	22.06	26.40	64.26	
September	•					
	Irrigate	6.78		6.34	13.12	
	Growth tube removal			18.48	18.48	
Total Sept	ember	6.78	0.00	24.82	31.60	
October - D	December					
	Apply Herbicide (spot spray)	3.35		5.28	8.63_	
	glyphosate		17.50		17.50	
Total Octo	ber - December	3.35	17.50	5.28	26.13	
Annual Adr	ministrative Costs					
	Real Estate Taxes		0.00		0.00	
	Management Fee		0.00		0.00	
	Net Land Rent		0.00		0.00	
	Miscellaneous		40.00		40.00	
	Overhead (Utilities, legal fees, etc)		30.00		30.00	
	Interest on Accumulating Investment		0.00		0.00	
Total Annu	ual Administrative Costs		70.00		70.00	
Seasonal C	Costs					
	1/2 Ton Pick-up	32.96		50.69	83.64	
	Operating Capital		0.00		0.00	
Total Seas	sonal Costs	32.96	0.00	50.69	83.64	

Notes:

¹Auger vine holes: 2 workers @ 3 min/vine

²Order & Replant 5% of the initial plants

Estimated Production Costs per Acre for Muscadine Grapes Grown for the Wine and Juice Markest, Geneva Double Curtain Trellis System with Drip Irrigation Second Year: First Harvest (yield = 1.2 tons per acre)

Month	Type of Operation	Equipment Costs	Materials Costs	Labor Costs	Total Costs	Your Costs
lanuary						
ouriuur y	Dormant Pruning (20 min/vine)	0.00		633.60	633.60	
Total Janu		\$0.00	\$0.00	\$633.60	\$633.60	
February						
Total Febr	uary	\$0.00	\$0.00	\$0.00	\$0.00	
March	Irrigation system proparation			12.67	12.67	
	Irrigation system preparation Fertilize	4.12		6.34	10.46	
	10-10-10	4.12	13.08	0.54	13.08	
	Apply Herbicide	3.42	10.00	5.28	8.70	
	flumioxazin (Chateau)+glyp		55.88	0.20	55.88	
Total Marc		\$7.54	\$68.96	\$24.29	\$100.79	
April						
	Irrigate	0.00		0.00	0.00	
	Mow alleys	5.59		6.34	11.93	
Total April		\$5.59	\$0.00	\$6.34	\$11.93	
May						
	Irrigate	13.56		12.67	26.24	
	Fertilize	4.12		6.34	10.46_	
	10-10-10	0.00	13.08	500.00	13.08_	
	Train/Prune (16 min/vine)	0.00 5.59		506.88 6.34	506.88 11.93	
Total May	Mow alleys	\$23.28	\$13.08	\$532.22	\$568.58	
June		φ23.20	\$13.00	φ332.22	\$300.30	
ourie	Leaf Analysis		4.00	2.64	6.64	
	Irrigate	13.56	4.00	12.67	26.24	
	Apply Herbicide	3.42		5.28	8.70	
	flumioxazin + glufosinate (I		111.50		111.50	
	Mow alleys (2X)	11.19		12.67	23.86	
Total June		\$28.18	\$115.50	\$33.26	\$176.94	
July						
	Irrigate	13.56		12.67	26.24	
	Fertilize	4.12		6.34	10.46	
	10-10-10		13.08		13.08	
	Apply Insecticide	3.42		5.28	8.70	
	chlorpyrifos (Lorsban 4E)		7.74		7.74_	
	Mow alleys (2X)	11.19	***	12.67	23.86	
Total July		\$32.30	\$20.82	\$36.96	\$90.08	
August	Attend Crower Meetings		5.00	8.45	12.45	
	Attend Grower Meetings Irrigate	13.56	5.00	12.67	13.45 26.24	
	Apply Herbicide	3.42		5.28	8.70	
	sethoxydim (Poast 1.5 EC)		17.06	0.20	17.06	
	Mow alleys	5.59	17.00	6.34	11.93	
Total Aug	· · · · · · · · · · · · · · · · · · ·	\$22.58	\$22.06	\$32.74	\$77.38	
September		,	7	40 -1111	*····	
•	Custom harvesting ¹	132.61		2.64	135.25	
	Irrigate	13.56		12.67	26.24	
Total Sept	ember	\$146.17	\$0.00	\$15.31	\$161.49	
October						
	Apply Herbicide (spot spray)	3.35		5.28	8.63	
	glyphosate		17.50		17.50	
Total Octo		\$3.35	\$17.50	\$5.28	\$26.13	
November				0/ 00	04	
Tatal No	Repair Trellis	60.00	00.00	31.68	31.68	
Total Nove December		\$0.00	\$0.00	\$31.68	\$31.68	
December Total Dece		\$0.00	\$0.00	\$0.00	\$0.00	
	ember ministrative Costs	φυ.υ0	φυ.υυ	φυ.υυ	φυ.υυ	
amuai Adi	Real Estate Taxes		0.00		0.00	
	Management Fee		0.00		0.00	
	Net Land Rent		0.00		0.00	
	Miscellaneous		40.00		40.00	
	Overhead (Utilities, legal fee, etc.)		30.00		30.00	
	Interest on Accumulating Investment		0.00		0.00	
Total Anni	ual Administrative Costs	\$0.00	\$70.00		\$70.00	
Seasonal (
	1/2 Ton Pick-up	32.96		50.69	83.64	
	Operating Capital		0.00		0.00	
Total Seas	sonal Costs	\$32.96	\$0.00	\$50.69	\$83.64	

Estimated Production Costs per Acre for Muscadine Grapes Grown for the Wine and Juice Markets, Geneva Double Curtain Trellis System with Drip Irrigation Third Year: Second Harvest (yield = 3.7 tons per acre)

	Type of Operation	Equipment Costs	Materials Costs	Labor Costs	Total Costs	Your Costs
lanuary						
January	Dormant mechanical pruning	255.00			255.00	
	Dormant pruning (20min/vine)	0.00		633.60	633.60	
Total Janua	ary	\$255.00	\$0.00	\$633.60	\$888.60	
February Total Febru	arv	\$0.00	\$0.00	\$0.00	\$0.00	
March	•					
	Irrigation system preparation			12.67	12.67	
	Fertilize 10-10-10	2.09	19.62	3.17	5.26 19.62	
	Apply Herbicide	3.42	15.02	5.28	8.70	
	flumioxazin (Chateau) +gly		55.88		55.88	
Total March	h	\$5.52	\$75.50	\$21.12	\$102.13	
April	ladant.	0.00		0.00	0.00	
	Irrigate Mow alleys	0.00 5.59		0.00 6.34	0.00 11.93	
Total April	wow dieyo	\$5.59	\$0.00	\$6.34	\$11.93	
May						
	Irrigate	20.35		19.01	39.35	
	Fertilize 10-10-10	2.09	19.62	3.17	5.26 19.62	
	Apply Insecticide (Prebloom)	5.72	19.02	5.28	11.00	
	carbaryl (Sevin 80 WP)		6.30		6.30	
	Apply Fungicide	5.72		5.28	11.00	
	myclobutanil (Nova 40 W)		12.00		12.00	
Total May	Mow alleys	5.59 \$39.46	\$37.92	6.34 \$39.08	11.93 \$116.46	
June		\$39.40	\$37.92	\$39.00	\$110.40	
	Leaf Analysis		4.00	2.64	6.64	
	Irrigate	20.35		19.01	39.35	
	Apply Herbicide	3.42	111.50	5.28	8.70_	
	flumioxazin + glufosinate (F Apply Insecticide	seiy) 5.72	111.50	5.28	111.50 11.00	
	carbaryl (Sevin 80 WP)	0.72	7.88	0.20	7.88	
	Apply Fungicide	5.72		5.28	11.00	
	captan (Captan 50 WP)		13.60		13.60	
Total June	Mow alleys (2X)	11.19 \$46.39	6400.00	12.67	23.86 \$233.53	
July		\$40.39	\$136.98	\$50.17	\$233.53	
,	Irrigate	20.35		19.01	39.35	
	Fertilize	2.09		3.17	5.26	
	10-10-10		19.62		19.62_	
	Apply Insecticide chlorpyrifos (Lorsban 4E)	3.42	9.00	5.28	8.70 9.00	
	Apply Fungicide	5.72	3.00	5.28	11.00	
	captan (Captan 50 WP)		13.60		13.60	
	Mow alleys (2X)	11.19		12.67	23.86	
Total July		\$42.77	\$42.22	\$45.41	\$130.40	
August	Attend Grower Meetings		5.00	8.45	13.45	
	Irrigate	20.35		19.01	39.35	
	Apply Herbicide	3.42		5.28	8.70	
	sethoxydim (Poast 1.5 EC)		17.06		17.06	
	Mechanical prunning (summer)					
		127.50		624	127.50	
Total Augu	Mow alleys	5.59	\$22.06	6.34 \$39.07	127.50 11.93	
_	Mow alleys		\$22.06	6.34 \$39.07	127.50	
_	Mow alleys st Custom harvesting¹	5.59 \$156.87 382.21	\$22.06	\$39.07 2.64	127.50 11.93 \$218.00	
September	Mow alleys st Custom harvesting¹ Irrigate	5.59 \$156.87 382.21 20.35		\$39.07 2.64 19.01	127.50 11.93 \$218.00 384.85 39.35	
September	Mow alleys st Custom harvesting¹ Irrigate	5.59 \$156.87 382.21	\$22.06 0.00	\$39.07 2.64	127.50 11.93 \$218.00	
September Total Septe	Mow alleys st Custom harvesting' Irrigate imber	5.59 \$156.87 382.21 20.35		\$39.07 2.64 19.01	127.50 11.93 \$218.00 384.85 39.35	
September Total Septe October	Mow alleys st Custom harvesting' Irrigate Mapply Herbicide (spot spray) glyphosate	5.59 \$156.87 382.21 20.35 402.56		\$39.07 2.64 19.01 21.65 5.28	127.50 11.93 \$218.00 384.85 39.35 424.20	
September Total Septe October Total Octob	Mow alleys st Custom harvesting' Irrigate Mapply Herbicide (spot spray) glyphosate	5.59 \$156.87 382.21 20.35 402.56	0.00	\$39.07 2.64 19.01 21.65	127.50 11.93 \$218.00 384.85 39.35 424.20	
September Total Septe October Total Octob	Mow alleys st Custom harvesting¹ lirrigate imber Apply Herbicide (spot spray) glyphosate per	5.59 \$156.87 382.21 20.35 402.56	0.00	\$39.07 2.64 19.01 21.65 5.28	127.50 11.93 \$218.00 384.85 39.35 424.20 8.63 17.50 \$26.13	
Total Augus September Total Septe October Total Octob November Total Nove	Mow alleys st Custom harvesting¹ Irrigate imber Apply Herbicide (spot spray) glyphosate Per Repair Trellis	5.59 \$156.87 382.21 20.35 402.56 3.35 \$3.35	0.00 17.50 \$17.50	\$39.07 2.64 19.01 21.65 5.28 \$5.28	127.50 11.93 \$218.00 384.85 39.35 424.20 8.63 17.50 \$26.13	
September Total Septe October Total Octob November Total Nove	Mow alleys st Custom harvesting¹ Irrigate imber Apply Herbicide (spot spray) glyphosate Per Repair Trellis	5.59 \$156.87 382.21 20.35 402.56	0.00	\$39.07 2.64 19.01 21.65 5.28	127.50 11.93 \$218.00 384.85 39.35 424.20 8.63 17.50 \$26.13	
September Total Septe October Total Octob November Total November December Total December	Mow alleys st Custom harvesting¹ Irrigate imber Apply Herbicide (spot spray) glyphosate Repair Trellis imber	5.59 \$156.87 382.21 20.35 402.56 3.35 \$3.35	0.00 17.50 \$17.50	\$39.07 2.64 19.01 21.65 5.28 \$5.28	127.50 11.93 \$218.00 384.85 39.35 424.20 8.63 17.50 \$26.13	
September Total Septe October Total Octob November Total November December Total December	Mow alleys st Custom harvesting¹ Irrigate Irrigate Apply Herbicide (spot spray) glyphosate oer Repair Trellis mber wher	5.59 \$156.87 382.21 20.35 402.56 3.35 \$3.35	0.00 17.50 \$17.50 \$0.00	\$39.07 2.64 19.01 21.65 5.28 \$5.28 21.12	127.50 11.93 \$218.00 384.85 39.35 424.20 8.63 17.50 \$26.13 21.12 \$21.12	
September Total Septe October Total Octob November Total November December Total December	Mow alleys st Custom harvesting¹ lirrigate imber Apply Herbicide (spot spray) glyphosate per Repair Trellis imber mber mistrative Costs Real Estate Taxes	5.59 \$156.87 382.21 20.35 402.56 3.35 \$3.35	0.00 17.50 \$17.50 \$0.00 \$0.00	\$39.07 2.64 19.01 21.65 5.28 \$5.28 21.12	127.50 11.93 \$218.00 384.85 39.35 424.20 8.63 17.50 \$26.13 21.12 \$21.12 \$0.00	
September Total Septe October Total Octob November Total November December Total December	Mow alleys st Custom harvesting¹ Irrigate Irrigate Apply Herbicide (spot spray) glyphosate oer Repair Trellis mber wher	5.59 \$156.87 382.21 20.35 402.56 3.35 \$3.35	0.00 17.50 \$17.50 \$0.00 0.00 0.00	\$39.07 2.64 19.01 21.65 5.28 \$5.28 21.12	127.50 11.93 \$218.00 384.85 39.35 424.20 8.63 17.50 \$26.13 21.12 \$21.12	
September Total Septe October Total Octob November Total November December Total December	Mow alleys st Custom harvesting¹ Irrigate miber Apply Herbicide (spot spray) glyphosate Prepair Trellis miber miber miber Repair Trellis miber mber Management Fee Management Fee	5.59 \$156.87 382.21 20.35 402.56 3.35 \$3.35	0.00 17.50 \$17.50 \$0.00 \$0.00	\$39.07 2.64 19.01 21.65 5.28 \$5.28 21.12	127.50 11.93 \$218.04.85 39.35 424.20 8.63 17.50 \$26.13 21.12 \$21.12 \$0.00	
September Total Septe October Total Octob November Total November December Total December	Mow alleys st Custom harvesting¹ Irrigate mber Apply Herbicide (spot spray) glyphosate Prepair Trellis mber Repair Trellis mber Apply Herbicide (spot spray) glyphosate Prepair Trellis mber Repair Letting mber More	5.59 \$156.87 382.21 20.35 402.56 3.35 \$3.35	0.00 17.50 \$17.50 \$0.00 \$0.00 0.00 0.00	\$39.07 2.64 19.01 21.65 5.28 \$5.28 21.12	127.50 11.93 \$218.00 384.85 39.35 424.20 8.63 17.50 \$26.13 21.12 \$21.12 \$21.12 \$0.00 0.00 0.00 0.00 40.00 30.00	
Total Septe October Total Octob November Total Novei December Total Decei	Mow alleys st Custom harvesting¹ lirrigate imber Apply Herbicide (spot spray) glyphosate er Repair Trellis mber inistrative Costs Real Estate Taxes Management Fee Net Land Rent Miscellaneous Overhead (Utilities, legal fees, etc.) Interest on Accumulating investment	5.59 \$156.87 382.21 20.35 402.56 3.35 \$3.35 \$0.00	0.00 17.50 \$17.50 \$0.00 0.00 0.00 40.00 30.00	\$39.07 2.64 19.01 21.65 5.28 \$5.28 21.12	127.50 11.93 \$218.00 384.85 39.35 424.20 8.63 17.50 \$26.13 21.12 \$21.12 \$0.00 0.00 0.00 40.00 30.00 0.00	
Total September Total September Total Octob November Total Nove December Total Decen Annual Adm	Mow alleys st Custom harvesting¹ lirrigate imber Apply Herbicide (spot spray)	5.59 \$156.87 382.21 20.35 402.56 3.35 \$3.35	\$0.00 17.50 \$17.50 \$0.00 \$0.00 0.00 0.00 40.00 30.00	\$39.07 2.64 19.01 21.65 5.28 \$5.28 21.12	127.50 11.93 \$218.00 384.85 39.35 424.20 8.63 17.50 \$26.13 21.12 \$21.12 \$21.12 \$0.00 0.00 0.00 0.00 40.00 30.00	
Total Septe October Total Octob November Total Novei December Total Decei	Mow alleys st Custom harvesting' Irrigate miber Apply Herbicide (spot spray) glyphosate Repair Trellis miber Repair Trellis miber Ministrative Costs Real Estate Taxes Management Fee Net Land Rent Miscellaneous Overhead (Utilities, legal fees, etc.) Interest on Accumulating Investment al Administrative Costs osts	\$.59 \$156.87 382.21 20.35 402.56 3.35 \$3.35 \$0.00	0.00 17.50 \$17.50 \$0.00 0.00 0.00 40.00 30.00	\$39.07 2.64 19.01 21.65 5.28 \$5.28 21.12 \$21.12	127.50 11.93 \$218.00 384.85 39.35 424.20 8.63 17.50 \$26.13 21.12 \$21.12 \$21.12 \$0.00 0.00 0.00 40.00 30.00 0.00 \$0.00 0.00 \$0.00 0.00 0.	
Total September Total September Total Octob November Total Nove December Total Decen Annual Adm	Mow alleys st Custom harvesting¹ lirrigate imber Apply Herbicide (spot spray)	5.59 \$156.87 382.21 20.35 402.56 3.35 \$3.35 \$0.00	0.00 17.50 \$17.50 \$0.00 0.00 0.00 40.00 30.00	\$39.07 2.64 19.01 21.65 5.28 \$5.28 21.12	127.50 11.93 \$218.00 384.85 39.35 424.20 8.63 17.50 \$26.13 21.12 \$21.12 \$0.00 0.00 0.00 40.00 30.00 0.00	
Total September Total September Total Octob November Total Nove December Total Decen Annual Adm	Mow alleys st Custom harvesting¹ Irrigate imber Apply Herbicide (spot spray) glyphosate Prepair Trellis imber Repair Trellis indistrative Costs Real Estate Taxes Management Fee Net Land Rent Miscellaneous Overhead (Utilities, legal fees, etc.) Interest on Accumulating Investment al Administrative Costs osts 1/2 Ton Pick-up Operating Capital	\$.59 \$156.87 382.21 20.35 402.56 3.35 \$3.35 \$0.00	0.00 17.50 \$17.50 \$0.00 0.00 0.00 40.00 30.00 \$70.00	\$39.07 2.64 19.01 21.65 5.28 \$5.28 21.12 \$21.12	127.50 11.93 \$218.00 384.85 39.35 424.20 8.63 17.50 \$26.13 21.12 \$21.12 \$21.12 \$0.00 0.00 0.00 0.00 0.00 0.00 \$1.0	

Notes:

Estimated Production Costs per Acre for Muscadine Grapes Grown for the Wine and Juice Markets, Geneva Double Curtain Trellis System with Drip Irrigation Fourth through Twentieth Years (yield = 10.0 tons per acre)

Month	Type of Operation	Equipment Costs	Materials Costs	Labor Costs	Total Costs	Your Costs
January						
	Dormant mechanical pruning	255.00			255.00	
	Dormant pruning (20min/vine)	0.00		633.60	633.60	
Total Janua	ary	\$255.00	\$0.00	\$633.60	\$888.60	
February Total Febru	arv	\$0.00	\$0.00	\$0.00	\$0.00	
March	•			• • • • • • • • • • • • • • • • • • • •		
	Irrigation system preparation			12.67	12.67	
	Fertilize 10-10-10	2.09	39.24	3.17	5.26_ 39.24	
	Apply Herbicide	3.42	39.24	5.28	8.70	
	flumioxazin (Chateau) +gly		55.88	0.20	55.88	
Total March		\$5.52	\$95.12	\$21.12	\$121.75	
April						
	Irrigate	0.00		0.00	0.00_	
Total April	Mow alleys	5.59 \$5.59	\$0.00	4.95 \$4.95	10.54 \$10.54	
May		ψ0.00	ψ0.00	Ψ4.55	ψ10.5 1 _	
•	Irrigate	20.35		19.01	39.35	
	Fertilize	2.09		3.17	5.26	
	10-10-10	£ 70	26.16	F 00	26.16_	
	Apply Insecticide (Prebloom) carbaryl (Sevin 80 WP)	5.72	6.30	5.28	11.00 6.30	
	Apply Fungicide (2X)	11.43	0.30	10.57	22.00	
	myclobutanil (Nova 40 W)		32.00	70.07	32.00	
	Spray Solubor (20% B)	5.72	0.70	5.28	11.70	
	Mow alleys	5.59	007.11	4.95	10.54	
Total May		\$50.89	\$65.16	\$48.26	\$164.32	
June	Leaf Analysis		4.00	2.64	6.64	
	Irrigate	20.35	7.00	19.01	39.35	
	Apply Herbicide	3.42		5.28	8.70	
	flumioxazin + glufosinate (l		111.50		111.50	
	Apply Insecticide	5.72	7.00	5.28	11.00_	
	carbaryl (Sevin 80 WP) Apply Fungicide	5.72	7.88	5.28	7.88_ 11.00	
	azoxystrobin (Abound 2.08		19.79	0.20	19.79	
	Apply Fungicide	5.72		5.28	11.00	
	captan+thiophanatemethyl		42.10		42.10	
T-4-1 1	Mow alleys (2X)	11.19	6405.00	9.90	21.09	
Total June July		\$52.11	\$185.26	\$52.68	\$290.05	
July	Irrigate	20.35		19.01	39.35	
	Apply Fungicide	5.72		5.28	11.00	
	captan (Captan 50 WP)		13.60		13.60	
	Apply Fungicide	5.72		5.28	11.00	
	azoxystrobin (Abound 2.08 SC)	0.40	19.79	5.00	19.79_ 8.70	
	Apply Insecticide chlorpyrifos (Lorsban 4E)	3.42	9.00	5.28	9.00	
	Mow alleys (2X)	11.19		9.90	21.09	
Total July		\$46.39	\$42.39	\$44.76	\$133.54	
August						
	Attend Grower Meetings	0.40	5.00	8.45	13.45_	
	Apply Herbicide sethoxydim (Poast 1.5 EC	3.42	17.06	5.28	8.70_ 17.06	
	Irrigate	20.35	17.00	19.01	39.35	
	Mechanical prunning (summer)	127.50			127.50	
	Mow alleys (1) (30' min/acre)	5.59		4.95	10.54	
Total Augus	st	\$156.87	\$22.06	\$37.69	\$216.61	
September	Custom harvesting ¹	1,007.81		2.64	1.010.45	
	Irrigate	20.35		19.01	39.35	
Total Septe		\$1,028.16	\$0.00	\$21.65	\$1,049.80	
October						
	Apply Herbicide (spot spray)	3.35	47.50	5.28	8.63_	
Total Octob	glyphosate	\$3.35	17.50 \$17.50	\$5.28	17.50 \$26.13	
November		90.00	¥17.50	ψJ.20	Ψ20.13	
	Repair Trellis			42.24	42.24	
Total Nove	mber	\$0.00	\$0.00	\$42.24	\$42.24	
December		60.00	60.00	60.00	60.00	
Total Decer	mber ninistrative Costs	\$0.00	\$0.00	\$0.00	\$0.00	
uniudi Adil	Real Estate Taxes		0.00		0.00	
	Management Fee		0.00		0.00	
	Net Land Rent		0.00		0.00	
	Miscellaneous		40.00		40.00	
	Overhead (Utilities, legal fees, etc)		30.00 0.00		30.00_ 0.00	
	Interest on Accumulating Investment al Administrative Costs		\$70.00		\$70.00	
Total Appro			\$70.00		Ψ/0.00	
Total Annua	osts					
	osts 1/2 Ton Pick-up	32.96		50.69	83.64	
Seasonal Co	1/2 Ton Pick-up Operating Capital		0.00		0.00	
	1/2 Ton Pick-up Operating Capital	32.96 \$32.96	0.00 \$0.00	50.69 \$50.69	_	

Estimated Monthly and Annual Production Costs per Acre for Muscadine Grapes Grown for the Wine and Juice Markets Geneva Double Curtain Trellis System with Drip Irrigation

Year & Month	Equipment Costs	Material Costs	Labor Costs	Total Costs	Your Costs
Site Preparation					
Site Preparation January	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	
February March	0.00	0.00	0.00	0.00	
waren April	0.00	0.00	0.00	0.00	
May	0.00	0.00	0.00	0.00	
June 	0.00	0.00	0.00	0.00	
July	0.00	0.00	0.00	0.00	
August	3.43	22.50	13.73	39.65	
September	0.00	0.00	0.00	0.00	
October	0.00	0.00	0.00	0.00	
November	23.48	647.90	32.42	703.80	
December	0.00	3,092.48	10.56	3,103.04	
Annual Charges	0.00	35.00	0.00	35.00	
Seasonal Charges	16.48	0.00	25.34	41.82	
Total Preparation Costs	\$43.38	\$3,797.88	\$82.05	\$3,923.31	
irst Year					
anuary	0.00	0.00	0.00	0.00	
ebruary	0.00	0.00	0.00	0.00	
March	158.46	0.00	926.40	1,084.86	
April	0.00	0.00	73.92	73.92	
May	19.92	185.27	578.69	783.88	
lune	25.52	57.24	284.06	366.82	
luly	25.52	15.54	284.06	325.12	
August	15.80	22.06	26.40	64.26	
September	6.78	0.00	24.82	31.60	
October	3.35	17.50	5.28	26.13	
November	0.00	0.00	0.00	0.00	
December	0.00	0.00	0.00	0.00	
Annual Charges	0.00	70.00	0.00	70.00	
Seasonal Charges	32.96	0.00	50.69	83.64	
Total First Year	\$288.29	\$367.61	\$2,254.32	\$2,910.23	
		·		_	
Second Year (Yield = 1.2 ton anuary	s/A) 0.00	0.00	633.60	633.60	
ebruary	0.00	0.00	0.00	0.00	
March	7.54	68.96	24.29	100.79	
April	5.59	0.00	6.34	11.93	
Лау	23.28	13.08	532.22	568.58	
lune	28.18	115.50	33.26	176.94	
luly	32.30	20.82	36.96	90.08	
August	22.58	22.06	32.74	77.38	
September	146.17	0.00	15.31	161.49	
October	3.35	17.50	5.28	26.13	
November	0.00	0.00	31.68	31.68	
December	0.00	0.00	0.00	0.00	
Annual Charges	0.00	70.00	0.00	70.00	
Seasonal Charges	32.96	0.00	50.69	83.64	
otal Second Year	\$301.95	\$327.92	\$1,402.37	\$2,032.24	
Third Year (Yield = 3.7 tons/	Δ١				
lanuary	255.00	0.00	633.60	888.60	
ebruary	0.00	0.00	0.00	0.00	
	5.52	75.50	21.12		
March				102.13	
April	5.59	0.00	6.34	11.93	
May	39.46	37.92	39.08	116.46	
une	46.39	136.98	50.17	233.53	
uly	42.77	42.22	45.41	130.40	
August	156.87	22.06	39.07	218.00	
September	402.56	0.00	21.65	424.20	
October	3.35	17.50	5.28	26.13	
lovember	0.00	0.00	21.12	21.12	
December	0.00	0.00	0.00	0.00	
Annual Charges	0.00	70.00	0.00	70.00	
				70.00 <u></u> 83.64	
Seasonal Charges Total Third Year	32.96 \$990.46	0.00 \$402.17	50.69 \$933.53	\$2,326.15	
ourth Year through Twentie	th Year (Yield = 255.00	= 10 tons /A) 0.00	633.60	888.60	
anuary					
ebruary	0.00	0.00	0.00	0.00	
March	5.52	95.12	21.12	121.75	
April	5.59	0.00	4.95	10.54	
Лау	50.89	65.16	48.26	164.32	
lune	52.11	185.26	52.68	290.05	
luly	46.39	42.39	44.76	133.54	
lugust	156.87	22.06	37.69	216.61	
Rugust September	1,028.16	0.00	21.65	1,049.80	
October	3.35	17.50	5.28	26.13	
	0.00	0.00	42.24	42.24	
December	0.00	0.00	0.00	0.00	
December	0.00 0.00	70.00	0.00	70.00	
November December Annual Charges Seasonal Charges Fotal Annual Costs	0.00				

Monthly Labor Estimates per Acre for Muscadine Grapes Grown for the Wine and Juice Markets Geneva Double Curtain Trellis System with Drip Irrigation

Year & Month	Your Labor Estima	
(P	erson Hours)	
Site Preparation		
January	0.000	
February	0.000	
March	0.000	
April	0.000	
May	0.000	
June	0.000	
July	0.000	
August	1.300 0.000	
September	0.000	
October November	0.000 3.070	
November December	1.000	
Miscellaneous Labor	2.400	
Total Prep Year	7.770	
F-17		
First Year January	0.000	
February	0.000	
March	105.840	
April	7.000	
May	54.800	
June	26.900	
July	26.900	
August		
September	2.500 2.350	
October	0.500	
November	0.500	
December	0.500	
Miscellaneous Labor	4.800	
Total First Year	232.590	
Second Year		
January	60.000	
February	0.000	
March	2.300	
April Mov	0.600	
May	50.400 3.150	
June July	3.500	
August	3.100	
September	1.450	
October	0.500	
November	3.000	
December	0.000	
Miscellaneous Labor	4.800	
Total Second Year	132.800	
Third Year		
January	60.000	
February	0.000	
March	2.000	
April	0.600	
May	3.701	
June	4.751	
July	4.300	
August	3.700	
September	2.050	
October	0.500	
November	2.000	
December Missellangeus Labor	0.000 4.800	
Miscellaneous Labor Total Third Year	4.800 88.402	
Fourth Year through Twentieth Ye		
January	60.000	
February	0.000	
March	2.000	
April May	0.600	
May	4.702 5.251	
June		
luke	4.501	
	2 700	
August	3.700	
July August September Octobor	2.050	
August September October	2.050 0.500	
August September October November	2.050 0.500 4.000	
August	2.050 0.500	

Breakeven and Net Present Value Analysis for Muscadine Grapes Grown for the Wine and Juice Markets, Geneva Double Curtain Trellis System with Drip Irrigation

		Total	Total	Net Cash		Discount	Present
	Yield	Costs	Revenue	Flow	Accumulated	Factor	Value of Net
Year	per Acre	per Acre	per Acre	per Acre	Cash Flow	6%	Cash Flow
0	0.0	5,015.01	0.00	(5,015.01)	(5,015.01)	1.00	(5,015.01)
1	0.0	5,692.01	0.00	(5,692.01)	(10,707.02)	0.94	(5,369.82)
2	1.2	2,032.24	624.00	(1,408.24)	(12,115.26)	0.89	(1,253.33)
3	3.7	2,326.15	1,872.00	(454.15)	(12,569.41)	0.84	(381.32)
4	10.0	3,097.23	5,000.32	1,903.09	(10,666.32)	0.79	1,507.43
5	10.0	3,097.23	5,000.32	1,903.09	(8,763.23)	0.75	1,422.10
6	10.0	3,097.23	5,000.32	1,903.09	(6,860.13)	0.70	1,341.61
7	10.0	3,097.23	5,000.32	1,903.09	(4,957.04)	0.67	1,265.67
8	10.0	3,097.23	5,000.32	1,903.09	(3,053.95)	0.63	1,194.02
9	10.0	3,097.23	5,000.32	1,903.09	(1,150.85)	0.59	1,126.44
10	10.0	3,502.23	5,000.32	1,498.09	347.24	0.56	836.53
11	10.0	3,097.23	5,000.32	1,903.09	2,250.34	0.53	1,002.53
12	10.0	3,452.19	5,000.32	1,548.13	3,798.47	0.50	769.37
13	10.0	3,097.23	5,000.32	1,903.09	5,701.56	0.47	892.24
14	10.0	3,097.23	5,000.32	1,903.09	7,604.65	0.44	841.74
15	10.0	3,170.31	5,000.32	1,830.01	9,434.67	0.42	763.60
16	10.0	3,097.23	5,000.32	1,903.09	11,337.76	0.39	749.15
17	10.0	3,097.23	5,000.32	1,903.09	13,240.86	0.37	706.74
18	10.0	3,097.23	5,000.32	1,903.09	15,143.95	0.35	666.74
19	10.0	3,097.23	5,000.32	1,903.09	17,047.04	0.33	629.00
20	10.0	2,601.67	5,000.32	2,398.65	19,445.69	0.31	747.91
	Total						\$4,443.33

Breakeven Year Total Accumulated Cah Flow Net Present Value Internal Rate of Return 10th Year \$19,445.69 \$4,443.33 9.54%

Estimated Returns to Land & Management per Acre for varying Prices and Yields for Muscadine Grapes Grown for the Wine and Juice Markets Geneva Double Curtain Trellis System with Drip Irrigation

Wholesale Price		Breakeven Yield				
			(Tons)			
(\$/Ton)	9	9.5	10	10.5	11	(Tons)
300	(1,663.94)	(1,563.94)	(1,463.94)	(1,363.94)	(1,263.94)	17.32
400	(763.94)	(613.94)	(463.94)	(313.94)	(163.94)	11.55
500	136.06	336.06	536.06	736.06	936.06	8.66
550	586.06	811.06	1,036.06	1,261.06	1,486.06	7.70
600	1,036.06	1,286.06	1,536.06	1,786.06	2,036.06	6.93