

**Estimated Production Costs, Gross Revenues, and Returns per Acre for
Muscadines Grapes Grown for the Wine and Juice Markets
Single Wire Trellis System with Drip Irrigation**

Revised: November 2006

Carlos Carpio
Assistant Professor, Department of Applied Economics and Statistics
Clemson University, Clemson, SC 29634-0313

Charles D. Safley
Professor, Department of Agricultural and resource Economics, North
Carolina State University, Raleigh, NC 27695-8109

E. Barclay Poling
Professor, Department of Horticultural Science, North State University
Raleigh, NC 27695-7609

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 single wire trellis (SWT) 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 pest pressures

Budget Contents

Monthly and annual cost estimates by operation

- Site Preparation
- Year 1: Planting Year
- Year2: First Harvest Year
- Year 3: Second Harvest Year
- Years 4 through 20: Full Production

Trellis Construction Costs

Monthly Cost Summary

Monthly Labor Requirement Summary

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, Single Wire Trellis System with Drip Irrigation
Site Preparation**

Month	Type of Operation	Equipment Costs	Materials Costs	Labor Costs	Total Costs	Your Costs
August						
	Attend Grower Meetings		5.00	8.45	13.45	
	Apply Herbicide	3.43		5.28	8.71	
	glyphosate		17.50		17.50	
Total August		\$3.43	\$22.50	\$13.73	\$39.65	
November						
	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	
	Apply Nutrients	2.93		4.44	7.36	
	Lime		77.00		77.00	
	Triple Superphosphate		20.40		20.40	
	Order plants		599.50	2.64	602.14	
Total November		\$23.48	\$746.90	\$32.42	\$802.80	
December						
	Order trellis supplies*		1,817.60	10.56	1,828.16	
Total December		\$0.00	\$1,817.60	\$10.56	\$1,828.16	
Annual Administrative 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 Annual Administrative Costs		\$0.00	\$35.00	\$0.00	\$35.00	
Seasonal Costs						
	1/2 Ton Pick-up	16.48		25.34	41.82	
	Operating Capital		0.00		0.00	
Total Seasonal Costs		\$16.48	\$0.00	\$25.34	\$41.82	
TOTAL SITE PREPARATION		\$43.38	\$2,622.00	\$82.05	\$2,747.43	

Estimated Materials Costs for a Single Wire Trellis for a 10-Acre Vineyard

Trellis Materials	Rate/ Acre	Unit	Cost per Unit	Total Cost	Your Cost
Treated 4" x 8' Posts	2180	ea	5.00	10,900.00	_____
Treated 6" x 8' Posts	528	ea	7.00	3,696.00	_____
Treated 4" x 4"x 6' Timbers	264	ea	5.00	1,320.00	_____
Wire, 100-pound rolls of # 9 galvanized	30	rolls	74.00	2,220.00	_____
Staples	50	lbs	0.80	40.00	_____
Total Trellis Materials Cost				\$18,176.00	_____

Estimated Construction Costs for a Single Wire Trellis for a 10-Acre Vineyard

Operation	Equipment Costs	Materials Costs	Labor		Total Costs	Your Cost
			Hours	Costs		
Materials Cost		18,176.00			18,176.00	_____
Mark rows and post locations			40	330.00	330.00	_____
Distribute posts	340.38		40	330.00	670.38	_____
Drive line posts (2 workers @ 3min/post)	1,091.04		218	1,798.50	2,889.54	_____
Auger and set end posts (2 workers @ 5 min/post)	363.93		88	726.00	1,089.93	_____
Build Trellis			150	1,237.50	1,237.50	_____
TOTAL COSTS	\$1,795.35	\$18,176.00	536	\$4,422.00	\$24,393.35	_____

**Estimated Production Costs per Acre for Muscadine Grapes Grown for the Wine and Juice Markets, Single Wre 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
January						
Total January		\$0.00	\$0.00	\$0.00	\$0.00	
February						
Total February		\$0.00	\$0.00	\$0.00	\$0.00	
March						
	Build Trellis	179.53		442.20	621.73	
	Auger vine holes ¹	5.03		230.21	235.24	
	Irrigation system preparation			12.67	12.67	
Total March		\$184.56	\$0.00	\$685.08	\$869.64	
April						
	Order Pruning Equipment			10.56	10.56	
	Plant vines (2 min/vine)			77.09	77.09	
Total April		\$ -	\$ -	\$ 87.65	\$ 87.65	
May						
	Order & Replant ²		30.25	10.56	40.81	
	Growth tube installation		139.52	42.24	181.76	
	Irrigate	7.22		6.34	13.56	
	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 (8 min/vine)	0.00		304.13	304.13	
	Mow alleys	5.59		6.34	11.93	
Total May		\$20.36	\$213.81	\$381.22	\$615.39	
June						
	Apply Herbicide	3.42		5.28	8.70	
	flumioxazin + paraquat		50.70		50.70	
	Irrigate	7.22		6.34	13.56	
	Fertilize	4.12		6.34	10.46	
	10-10-10		6.54		6.54	
	Train/Prune (4 min/vine)	0.00		152.06	152.06	
	Mow alleys (2X)	11.19		12.67	23.86	
Total June		\$25.95	\$57.24	\$182.69	\$265.88	
July						
	Irrigate	7.22		6.34	13.56	
	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 (4min/vine)	0.00		152.06	152.06	
	Mow alleys (2X)	11.19		12.67	23.86	
Total July		\$25.95	\$15.54	\$182.69	\$224.18	
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	7.22		6.34	13.56	
	Mow alleys	5.59		6.34	11.93	
Total August		\$16.24	\$22.06	\$26.40	\$64.70	
September						
	Irrigate	7.22		6.34	13.56	
	Growth tube removal			21.12	21.12	
Total September		\$7.22	\$0.00	\$27.46	\$34.68	
October - December						
	Apply Herbicide (spot spray)	3.35		5.28	8.63	
	glyphosate		17.50		17.50	
Total October - December		\$3.35	\$17.50	\$5.28	\$26.13	
Annual Administrative 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 Annual Administrative Costs			\$70.00		\$70.00	
Seasonal Costs						
	1/2 Ton Pick-up	32.96		50.69	83.64	
	Operating Capital		0.00		0.00	
Total Seasonal Costs		\$32.96	\$0.00	\$50.69	\$83.64	
TOTAL FIRST YEAR COSTS		\$316.60	\$396.15	\$1,629.14	\$2,341.89	

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 Markets, Single Wire Trellis System with Drip Irrigation
Second Year: First Harvest (yield = 1 ton per acre)

Month	Type of Operation	Equipment Costs	Materials Costs	Labor Costs	Total Costs	Your Costs
January						
	Dormant Pruning (10min/vine)	0.00		380.16	380.16	
Total January		\$0.00	\$0.00	\$380.16	\$380.16	
February						
Total February		\$0.00	\$0.00	\$0.00	\$0.00	
March						
	Irrigation system preparation			12.67	12.67	
	Fertilize	4.12		6.34	10.46	
	10-10-10		13.08		13.08	
	Apply Herbicide	3.42		5.28	8.70	
	flumioxazin (Chateau)+glyphosate		55.88		55.88	
Total March		\$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	14.44		12.67	27.11	
	Fertilize	4.12		6.34	10.46	
	10-10-10		13.08		13.08	
	Train/Prune (8 min/vine)	0.00		304.13	304.13	
	Mow alleys	5.59		6.34	11.93	
Total May		\$24.16	\$13.08	\$329.47	\$366.71	
June						
	Leaf Analysis		4.00	2.64	6.64	
	Irrigate	14.44		12.67	27.11	
	Apply Herbicide	3.42		5.28	8.70	
	flumioxazin + glufosinate (Rely)		111.50		111.50	
	Mow alleys (2X)	11.19		12.67	23.86	
Total June		\$29.06	\$115.50	\$33.26	\$177.82	
July						
	Irrigate	14.44		12.67	27.11	
	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		\$33.18	\$20.82	\$36.96	\$90.96	
August						
	Attend Grower Meetings		5.00	8.45	13.45	
	Irrigate	14.44		12.67	27.11	
	Apply Herbicide	5.48		8.45	13.93	
	sethoxydim (Poast 1.5 EC)		17.06		17.06	
	Mow alleys	5.59		6.34	11.93	
Total August		\$25.52	\$22.06	\$35.90	\$83.48	
September						
	Custom harvesting ¹	107.81		2.64	110.45	
	Irrigate	14.44		12.67	27.11	
Total September		\$122.25	\$0.00	\$15.31	\$137.56	
October						
	Apply Herbicide (spot spray)	3.35		5.28	8.63	
	glyphosate		17.50		17.50	
Total October		\$3.35	\$17.50	\$5.28	\$26.13	
November						
	Repair Trellis			21.12	21.12	
Total November		\$0.00	\$0.00	\$21.12	\$21.12	
December						
Total December		\$0.00	\$0.00	\$0.00	\$0.00	
Annual Administrative 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 Annual Administrative Costs		\$0.00	\$70.00		\$70.00	
Seasonal Costs						
	1/2 Ton Pick-up	32.96		50.69	83.64	
	Operating Capital		0.00		0.00	
Total Seasonal Costs		\$32.96	\$0.00	\$50.69	\$83.64	
TOTAL SECOND YEAR COSTS		\$283.60	\$327.92	\$938.78	\$1,550.30	

Notes:

¹Custom harvesting: Grower provides a 60 HP tractor

**Estimated Production Costs per Acre for Muscadine Grapes Grown for the Wine and Juice Markets, Single Wire Trellis System with Drip Irrigation
Third Year: Second Harvest (yield = 3 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 (10min/vine)	0.00		380.16	380.16	
Total January		\$255.00	\$0.00	\$380.16	\$635.16	
February						
Total February		\$0.00	\$0.00	\$0.00	\$0.00	
March						
	Irrigation system preparation			12.67	12.67	
	Fertilize	2.09		3.17	5.26	
	10-10-10		19.62		19.62	
	Apply Herbicide	3.42		5.28	8.70	
	flumioxazin (Chateau) +glyphosate		55.88		55.88	
Total March		\$5.52	\$75.50	\$21.12	\$102.13	
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	21.66		19.01	40.67	
	Fertilize	2.09		3.17	5.26	
	10-10-10		19.62		19.62	
	Apply Insecticide (Prebloom)	5.72		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	
	Mow alleys	5.59		6.34	11.93	
Total May		\$40.78	\$37.92	\$39.08	\$117.78	
June						
	Leaf Analysis		4.00	2.64	6.64	
	Irrigate	21.66		19.01	40.67	
	Apply Herbicide	3.42		5.28	8.70	
	flumioxazin + glufosinate (Rely)		111.50		111.50	
	Apply Insecticide	5.72		5.28	11.00	
	carbaryl (Sevin 80 WP)		7.88		7.88	
	Apply Fungicide	5.72		5.28	11.00	
	captan (Captan 50 WP)		13.60		13.60	
	Mow alleys (2X)	11.19		12.67	23.86	
Total June		\$47.71	\$136.98	\$50.17	\$234.85	
July						
	Irrigate	21.66		19.01	40.67	
	Fertilize	2.09		3.17	5.26	
	10-10-10		19.62		19.62	
	Apply Insecticide	3.42		5.28	8.70	
	chlorpyrifos (Lorsban 4E)		9.00		9.00	
	Apply Fungicide	5.72		5.28	11.00	
	captan (Captan 50 WP)		13.60		13.60	
	Mow alleys (2X)	11.19		12.67	23.86	
Total July		\$44.08	\$42.22	\$45.41	\$131.72	
August						
	Attend Grower Meetings		5.00	8.45	13.45	
	Irrigate	21.66		19.01	40.67	
	Apply Herbicide	3.42		5.28	8.70	
	sethoxydim (Poast 1.5 EC)		17.06		17.06	
	Mechanical pruning (summer)	127.50			127.50	
	Mow alleys	5.59		6.34	11.93	
Total August		\$158.18	\$22.06	\$39.07	\$219.32	
September						
	Custom harvesting ¹	307.81		2.64	310.45	
	Irrigate	21.66		19.01	40.67	
Total September		\$329.47	\$0.00	\$21.65	\$351.12	
October						
	Apply Herbicide (spot spray)	3.35		5.28	8.63	
	glyphosate		17.50		17.50	
Total October		\$3.35	\$17.50	\$5.28	\$26.13	
November						
	Repair Trellis			21.12	21.12	
Total November		\$0.00	\$0.00	\$21.12	\$21.12	
December						
Total December		\$0.00	\$0.00	\$0.00	\$0.00	
Annual Administrative 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 Annual Administrative Costs			\$70.00		\$70.00	
Seasonal Costs						
	1/2 Ton Pick-up	32.96		50.69	83.64	
	Operating Capital		0.00		0.00	
Total Seasonal Costs		\$32.96	\$0.00	\$50.69	\$83.64	
TOTAL THIRD YEAR COSTS		\$922.64	\$402.17	\$680.09	\$2,004.90	

Notes:

¹Custom harvesting: Grower provides a 60 HP tractor

**Estimated Production Costs per Acre for Muscadine Grapes Grown for the Wine and Juice Market, Single Wire Trellis System with Drip Irrigation
Fourth through Twentieth Years (yield = 8.0 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 (10min/vine)	0.00		380.16	380.16	
Total January		\$255.00	\$0.00	\$380.16	\$635.16	
February						
Total February		\$0.00	\$0.00	\$0.00	\$0.00	
March						
	Irrigation system preparation			12.67	12.67	
	Fertilize	2.09		3.17	5.26	
	10-10-10		39.24		39.24	
	Apply Herbicide	3.42		5.28	8.70	
	flumioxazin (Chateau) +glyphosate		55.88		55.88	
Total March		\$5.52	\$95.12	\$21.12	\$121.75	
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	21.66		19.01	40.67	
	Fertilize	2.09		3.17	5.26	
	10-10-10		26.16		26.16	
	Apply Insecticide (Prebloom)	5.72		5.28	11.00	
	carbaryl (Sevin 80 WP)		6.30		6.30	
	Apply Fungicide	11.43		10.57	22.00	
	myclobutanil (Nova 40 W) 2X		32.00		32.00	
	Spray Solubor (20% B)	5.72	0.70	5.28	11.70	
	Mow alleys	5.59		6.34	11.93	
Total May		\$52.21	\$65.16	\$49.65	\$167.02	
June						
	Leaf Analysis		4.00	2.64	6.64	
	Irrigate	21.66		19.01	40.67	
	Apply Herbicide	3.42		5.28	8.70	
	flumioxazin + glufosinate (Rely)		111.50		111.50	
	Apply Insecticide	5.72		5.28	11.00	
	carbaryl (Sevin 80 WP)		7.88		7.88	
	Apply Fungicide	5.72		5.28	11.00	
	azoxystrobin (Abound 2.08 SC)		19.79		19.79	
	Apply Fungicide					
	captan+Topsin	5.72	42.10	5.28	53.10	
	Mow alleys (2X)	11.19		12.67	23.86	
Total June		\$53.42	\$185.26	\$55.45	\$294.14	
July						
	Irrigate	21.66		19.01	40.67	
	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)		19.79		19.79	
	Apply Insecticide	3.42		5.28	8.70	
	chlorpyrifos (Lorsban 4E)		9.00		9.00	
	Mow alleys (2X)	11.19		12.67	23.86	
Total July		\$47.71	\$42.39	\$47.53	\$137.62	
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	21.66		19.01	40.67	
	Mechanical pruning (summer)	127.50			127.50	
	Mow alleys	5.59		6.34	11.93	
Total August		\$158.18	\$22.06	\$39.07	\$219.32	
September						
	Custom harvesting ¹	807.81		2.64	810.45	
	Irrigate	21.66		19.01	40.67	
Total September		\$829.47	\$0.00	\$21.65	\$851.12	
October						
	Apply Herbicide (spot spray)	3.35		5.28	8.63	
	glyphosate		17.50		17.50	
Total October		\$3.35	\$17.50	\$5.28	\$26.13	
November						
	Repair Trellis			21.12	21.12	
Total November		\$0.00	\$0.00	\$21.12	\$21.12	
December						
Total December		\$0.00	\$0.00	\$0.00	\$0.00	
Annual Administrative 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 Annual Administrative Costs			\$70.00		\$70.00	
Seasonal Costs						
	1/2 Ton Pick-up	32.96		50.69	83.64	
	Operating Capital		0.00		0.00	
Total Seasonal Costs		\$32.96	\$0.00	\$50.69	\$83.64	
TOTAL ANNUAL COSTS		\$1,443.41	\$497.49	\$698.05	\$2,638.95	

Notes:

¹Custom harvesting: Grower provides a 60 HP tractor

**Estimated Monthly and Annual Production Costs per Acre for Muscadine Grapes
Grown for the Wine and Juice Markets
Single Wire Trellis System with Drip Irrigation**

Year & Month	Equipment Costs	Material Costs	Labor Costs	Total Costs	Your Costs
Site Preparation					
January	0.00	0.00	0.00	0.00	_____
February	0.00	0.00	0.00	0.00	_____
March	0.00	0.00	0.00	0.00	_____
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	746.90	32.42	802.80	_____
December	0.00	1,817.60	10.56	1,828.16	_____
Annual Charges	0.00	35.00	0.00	35.00	_____
Seasonal Charges	16.48	0.00	25.34	41.82	_____
Total Site Preparation	43.38	2,622.00	82.05	2,747.43	_____
First Year					
January	0.00	0.00	0.00	0.00	_____
February	0.00	0.00	0.00	0.00	_____
March	184.56	0.00	685.08	869.64	_____
April	0.00	0.00	87.65	87.65	_____
May	20.36	213.81	381.22	615.39	_____
June	25.95	57.24	182.69	265.88	_____
July	25.95	15.54	182.69	224.18	_____
August	16.24	22.06	26.40	64.70	_____
September	7.22	0.00	27.46	34.68	_____
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	316.60	396.15	1,629.14	2,341.89	_____
Second Year (Yield = 1 ton/A)					
January	0.00	0.00	380.16	380.16	_____
February	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	_____
May	24.16	13.08	329.47	366.71	_____
June	29.06	115.50	33.26	177.82	_____
July	33.18	20.82	36.96	90.96	_____
August	25.52	22.06	35.90	83.48	_____
September	122.25	0.00	15.31	137.56	_____
October	3.35	17.50	5.28	26.13	_____
November	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	_____
Seasonal Charges	32.96	0.00	50.69	83.64	_____
Total Second Year	283.60	327.92	938.78	1,550.30	_____
Third Year (Yield = 3 tons/A)					
January	255.00	0.00	380.16	635.16	_____
February	0.00	0.00	0.00	0.00	_____
March	5.52	75.50	21.12	102.13	_____
April	5.59	0.00	6.34	11.93	_____
May	40.78	37.92	39.08	117.78	_____
June	47.71	136.98	50.17	234.85	_____
July	44.08	42.22	45.41	131.72	_____
August	158.18	22.06	39.07	219.32	_____
September	329.47	0.00	21.65	351.12	_____
October	3.35	17.50	5.28	26.13	_____
November	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	_____
Seasonal Charges	32.96	0.00	50.69	83.64	_____
Total Third Year	922.64	402.17	680.09	2,004.90	_____
Fourth Year through Twentieth Year (Yield = 8 tons /A)					
January	255.00	0.00	380.16	635.16	_____
February	0.00	0.00	0.00	0.00	_____
March	5.52	95.12	21.12	121.75	_____
April	5.59	0.00	6.34	11.93	_____
May	52.21	65.16	49.65	167.02	_____
June	53.42	185.26	55.45	294.14	_____
July	47.71	42.39	47.53	137.62	_____
August	158.18	22.06	39.07	219.32	_____
September	829.47	0.00	21.65	851.12	_____
October	3.35	17.50	5.28	26.13	_____
November	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	_____
Seasonal Charges	32.96	0.00	50.69	83.64	_____
Total Fourth Year	1,443.41	497.49	698.05	2,638.95	_____

**Monthly Labor Estimates per Acre for Muscadine Grapes
Grown for the Wine and Juice Markets
Single Wire Trellis System with Drip Irrigation**

Year & Month	Labor (Person Hours)	Your Estimate
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	_____
September	0.000	_____
October	0.000	_____
November	3.070	_____
December	1.000	_____
Seasonal Charges	2.400	_____
Total Site Preparation	7.770	_____
First Year		
January	0.000	_____
February	0.000	_____
March	76.600	_____
April	8.300	_____
May	36.100	_____
June	17.300	_____
July	17.300	_____
August	2.500	_____
September	2.600	_____
October	0.500	_____
November	0.500	_____
December	0.500	_____
Seasonal Charges	4.800	_____
Total First Year	167.000	_____
Second Year		
January	36.000	_____
February	0.000	_____
March	2.300	_____
April	0.600	_____
May	31.200	_____
June	3.150	_____
July	3.500	_____
August	3.400	_____
September	1.450	_____
October	0.500	_____
November	2.000	_____
December	0.000	_____
Seasonal Charges	4.800	_____
Total Second Year	88.900	_____
Third Year		
January	36.000	_____
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	0.000	_____
Seasonal Charges	4.800	_____
Total Third Year	64.402	_____
Fourth Year through Twentieth Year		
January	36.000	_____
February	0.000	_____
March	2.000	_____
April	0.600	_____
May	4.702	_____
June	5.251	_____
July	4.501	_____
August	3.700	_____
September	2.050	_____
October	0.500	_____
November	4.000	_____
December	0.000	_____
Seasonal Charges	4.800	_____
Total Annual Labor	68.104	_____

**Breakeven and Net Present Value Analysis for Muscadine Grapes Grown for the Wine
and Juice Markets, Single WireTrellis System with Drip Irrigation**

Year	Yield per Acre	Total Costs per Acre	Total Revenue per Acre	Net Cash Flow per Acre	Accumulated Cash Flow	Discount Factor 6%	Present Value of Net Cash Flow
0	0	3,839.13	0.00	(3,839.13)	(3,839.13)	1.00	(3,839.13)
1	0	5,224.95	0.00	(5,224.95)	(9,064.09)	0.94	(4,929.20)
2	1	1,550.30	500.00	(1,050.30)	(10,114.39)	0.89	(934.76)
3	3	2,004.90	1,500.00	(504.90)	(10,619.28)	0.84	(423.92)
4	8	2,638.95	4,000.00	1,361.05	(9,258.24)	0.79	1,078.08
5	8	2,638.95	4,000.00	1,361.05	(7,897.19)	0.75	1,017.05
6	8	2,638.95	4,000.00	1,361.05	(6,536.14)	0.70	959.49
7	8	2,638.95	4,000.00	1,361.05	(5,175.09)	0.67	905.17
8	8	2,638.95	4,000.00	1,361.05	(3,814.04)	0.63	853.94
9	8	2,638.95	4,000.00	1,361.05	(2,453.00)	0.59	805.60
10	8	3,043.95	4,000.00	956.05	(1,496.95)	0.56	533.85
11	8	2,638.95	4,000.00	1,361.05	(135.90)	0.53	716.98
12	8	2,993.91	4,000.00	1,006.09	870.19	0.50	499.99
13	8	2,638.95	4,000.00	1,361.05	2,231.24	0.47	638.11
14	8	2,638.95	4,000.00	1,361.05	3,592.28	0.44	601.99
15	8	2,712.03	4,000.00	1,287.97	4,880.25	0.42	537.42
16	8	2,638.95	4,000.00	1,361.05	6,241.30	0.39	535.77
17	8	2,638.95	4,000.00	1,361.05	7,602.35	0.37	505.44
18	8	2,638.95	4,000.00	1,361.05	8,963.40	0.35	476.83
19	8	2,638.95	4,000.00	1,361.05	10,324.45	0.33	449.84
20	8	2,143.40	4,000.00	1,856.60	12,181.05	0.31	578.90
Total							\$1,567.46

Breakeven Year	<u>12th Year</u>
Total Accumulated Cah Flow	<u>\$12,181.05</u>
Net Present Value	<u>\$1,567.46</u>
Internal Rate of Return	<u>7.60%</u>

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

Wholesale Price	Marketable Yield per Acre					Breakeven Yield
	(Tons)					
(\$/Ton)	7.2	7.6	8	8.4	8.8	(Tons)
400	(830.29)	(710.29)	(590.29)	(470.29)	(350.29)	9.97
450	(470.29)	(330.29)	(190.29)	(50.29)	89.71	8.54
500	(110.29)	49.71	209.71	369.71	529.71	7.48
550	249.71	429.71	609.71	789.71	969.71	6.65
600	609.71	809.71	1,009.71	1,209.71	1,409.71	5.98