Representative Farm Models: Thompson Seedless Grapes

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Representative Farm Model Overview

- Representative farm is the size of operation most likely to be in production in a given region.
  - NOT AVERAGE
- Model's Capabilities
  - A Decision Making tool
  - Policy Analysis
  - Market/Production Analysis
- Several Interrelated Worksheets in Excel
  - Calculates Key Output Variables (KOVs)

Pro Forma Financial Worksheet

- Income Statement 2005-2010
  - KOV: Net Income
- Statement of Cash Flows
  - KOV: Cash Flow Position
- Balance Sheet
  - KOV: Debt to Asset Ratio, Net Present Value, Net Worth, Liquidity, etc

Representative Farm Models Capture Price and Yield Variability

- Prices and Yields allowed to fluctuate around a given mean forecasted price and yield for each year being simulated.
  - Based on forecasted mean price and yield and historical price and yield variability.
  - Captures the yield and price risk involved in agricultural production.
  - One hundred price and yield combinations are selected around each year's forecasted mean price and yield giving one hundred net revenue and cash flow estimates for each year in the simulation.
  - Allows for more "realistic" analyses

Thompson Seedless Model

- Fresno Region
- 115 acres in production; 120 owned on farm
- Allows for any combination of Raisin and Green production
- Any percentage of Green production can be contracted
- Allows for either Well or District Water costs
- Can switch the mean yield between low, medium, or higher yields (8.5,11,15 tons/acre)

Scenario Yields Tons/Acre

Year	Low Green Yield	Low Raisin Yield	Medium Green Yield	Medium Raisin Yield	High Green Yield	High Raisin Yield
2006	8.5	2.04	11.03	2.65	15.01	3.6
2007	8.5	2.04	11.03	2.65	15.00	3.6
2008	8.57	2.06	11.13	2.67	15.14	3.63
2009	8.59	2.06	11.15	2.68	15.18	3.64
2010	8.61	2.07	11.18	2.68	15.21	3.65

Scenario Prices $/Ton

Year	Cash Market Green Price	Contract Green Price	Cash Market Raisin Price
2006	$99.00	$165.00	$929.60
2007	$99.00	$165.00	$939.40
2008	$99.00	$165.00	$950.28
2009	$99.00	$165.00	$960.75
2010	$99.00	$165.00	$971.25

Fresno Production Costs (numbers include overhead costs)

Raisin Cultural Costs ($/acre)	
Irrigate Well	$121.00
Irrigate District	$0.00
Fertilize	$100.00
Weed Control	$35.00
Insect/Disease Control	$125.00
Lube and Repair	$32.00
Growth Regulator	$0.00
Labor	$300.00
Fuel	$35.00
Total Cultural Production Costs per acre	**$748.00**

Raisin Harvest Costs ($/ton)	
Picking	$123.00
Rolling	$28.00
Box	$12.00
Paper	$25.00
Hauling	$10.00
Turning	$28.00
Total Harvest Costs per ton (Paper Drying)	**$226.00**

Green Cultural Costs ($/acre)	
Irrigate Well	$121.00
Irrigate District	$0.00
Fertilize	$50.00
Weed Control	$20.00
Insect/Disease Control	$125.00
Lube and Repair	$32.00
Growth Regulator	$0.00
Labor	$300.00
Fuel	$35.00
Total Cultural Costs per Acre	**$683.00**

Green Harvest Costs	
Picking ($/acre)	$200.00
Hauling ($/ton)	$10.00

Loan Information

- Land Loan
  - $200,000 principle remaining in 2005 at 7.5% interest rate
    - Amortized over 15 years
  - Net Income accounts for interest payments
  - Cash Flow accounts for principle payments
- Operating Loan
  - The interest on operating loans is built into cultural costs.

UCD Production Costs

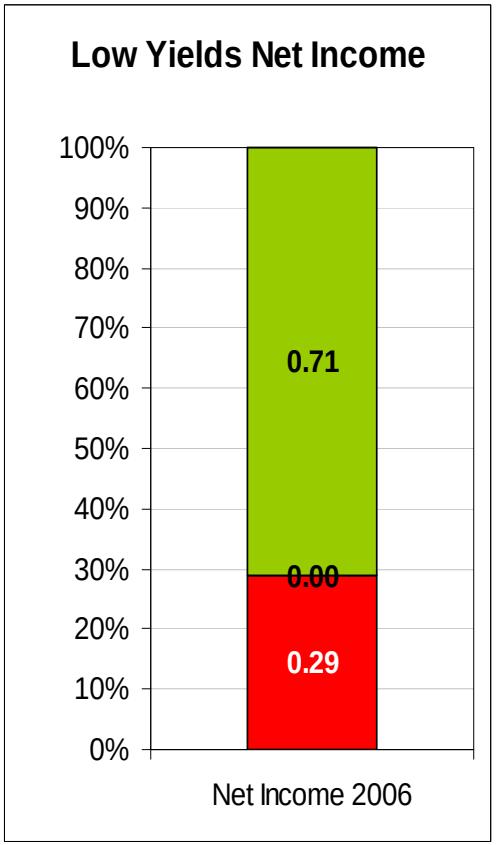
Raisin Cultural Costs ($/acre)	
Irrigate	$121
Fertilize	$8
Weed Control	$9
Insect/Disease Control	$64
Lube and Repair	$32
Growth Regulator	$0
Fuel	$30
Labor	$427
Total Cultural Costs ($/acre)	**$691**
Raisin Harvest Costs ($/acre)	
Harvest	$120
Bin Handling	$173
Haul	$11
Total Harvest Costs (Drying on vine)	**$304**

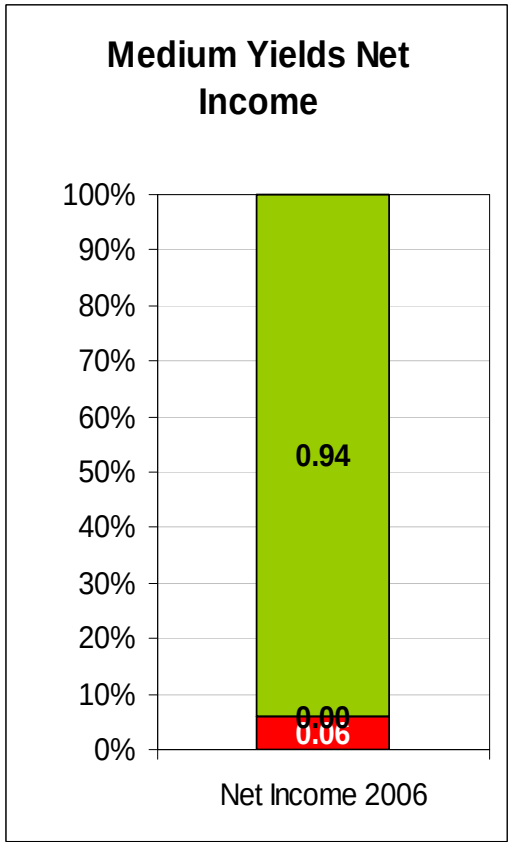
Green Cultural Costs ($/acre)	
Irrigate	$170
Fertilizer	$16
Weed Control	$80
Insect/Disease Control	$97
Lube and Repair	$13
Tie Vines	$11
Labor	$436
Fuel	$70
Total Cultural Costs ($/acre)	**$893**
Green Harvest Costs ($/acre)	**$345**

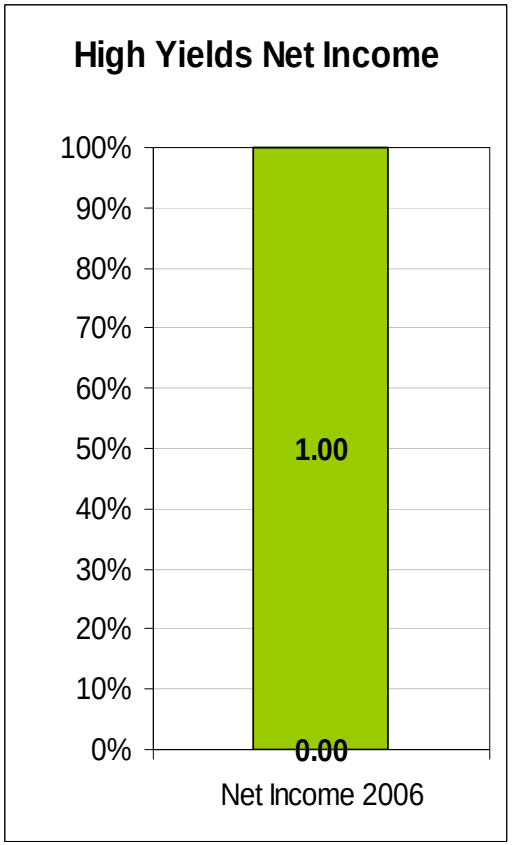
Scenarios
Break Even Analyses Using Fresno Production Costs

- 50% Green 50% Raisin Production 0% Contracted Green Production
  - Low Yields (8.5), Medium Yields (11), High Yields (15)
- 50% Green 50% Raisin Production 50% Contracted Green Production
  - Low Yields, Medium Yields, High Yields
- 100% Green 0% Contracted Green Production
  - Low Yields, Medium Yields, High Yields

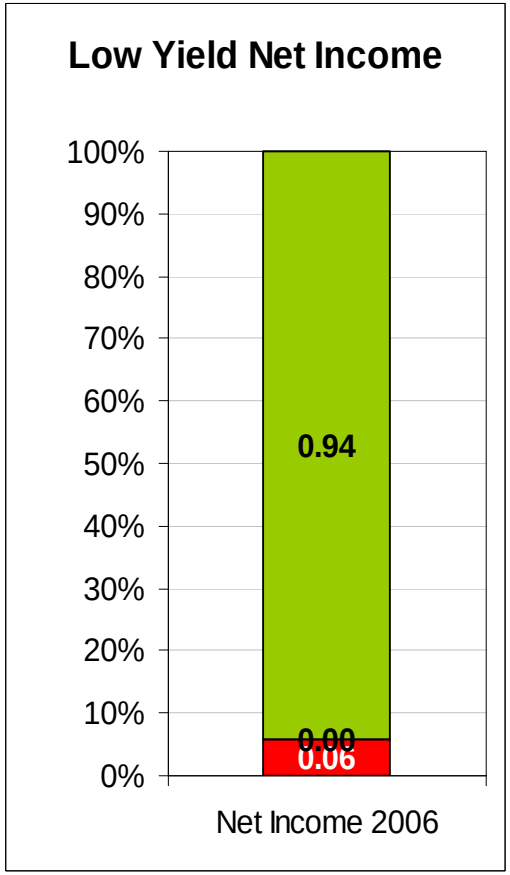
Net Income Break Even Analysis
50% Green 50% Raisin
0% Contracted Green Production

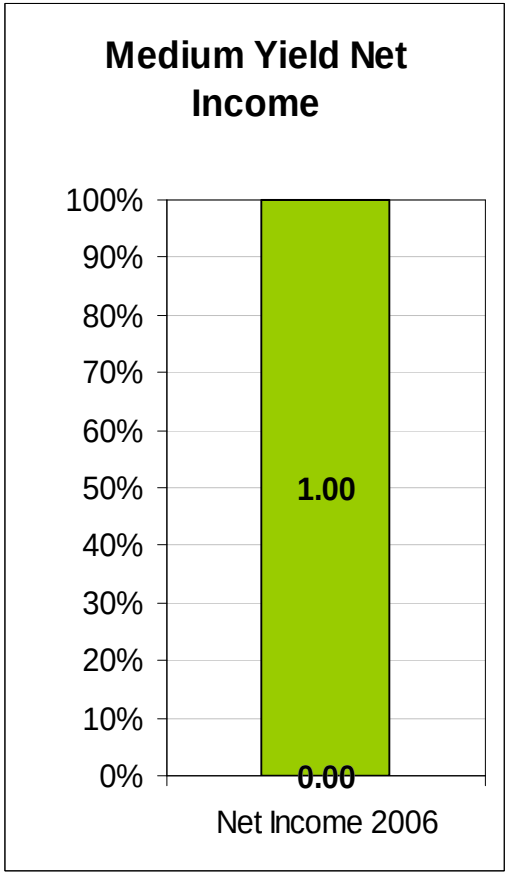


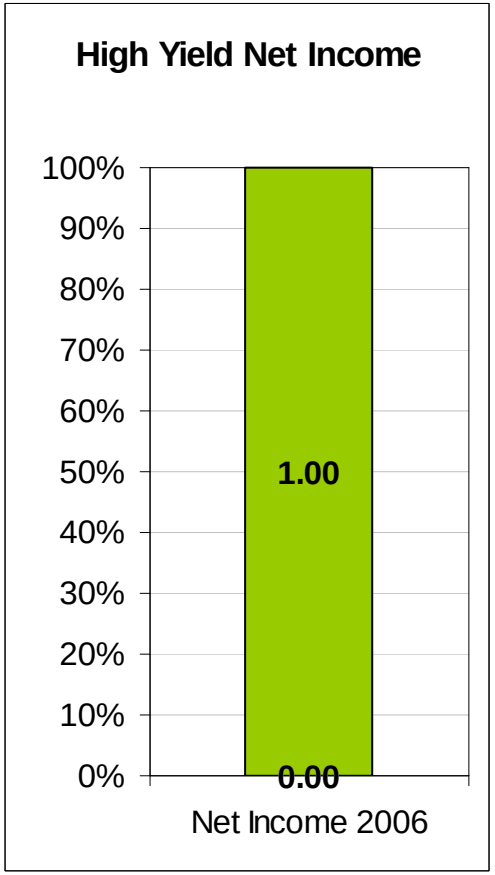




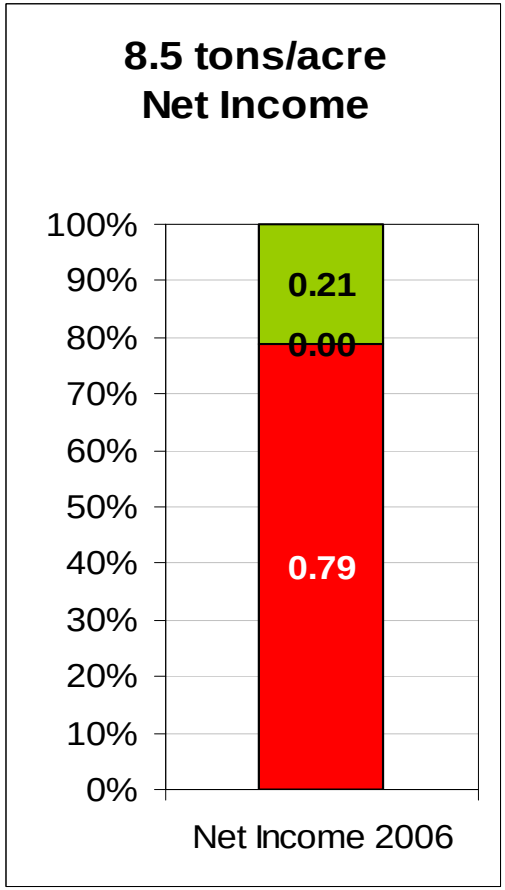
Net Income Break Even Analysis
50% Green 50% Raisin
50% Contracted Green Production

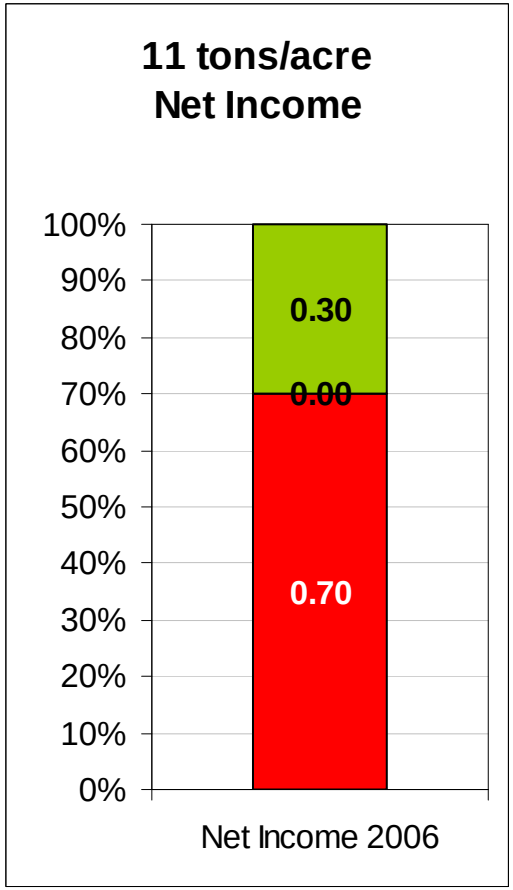


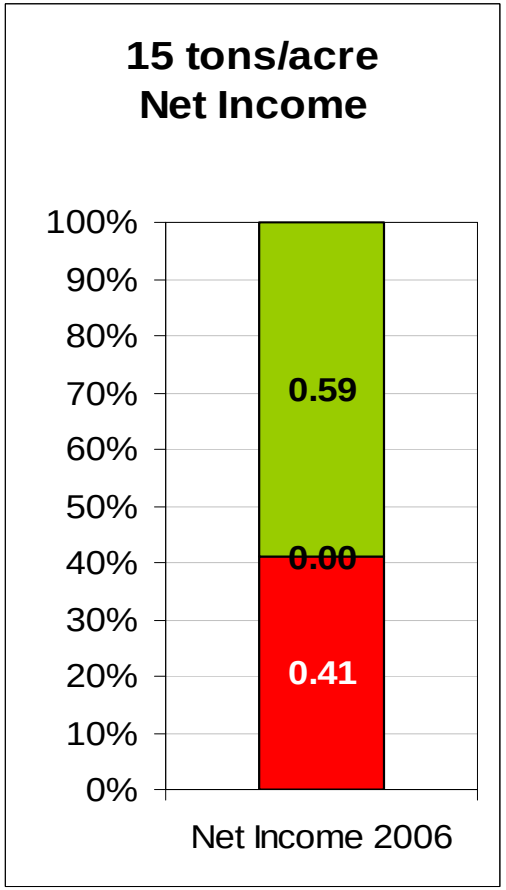




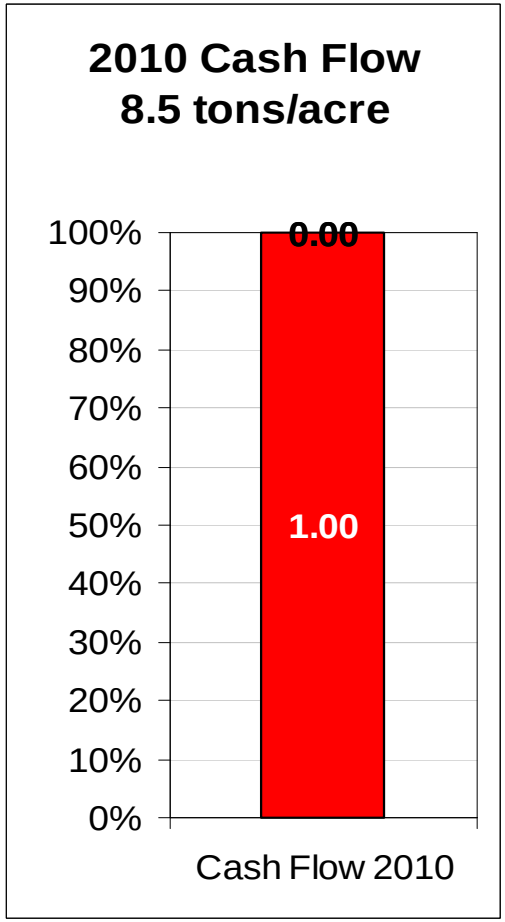
Net Income Break Even Analysis
100% Green
0% Contracted Green Production

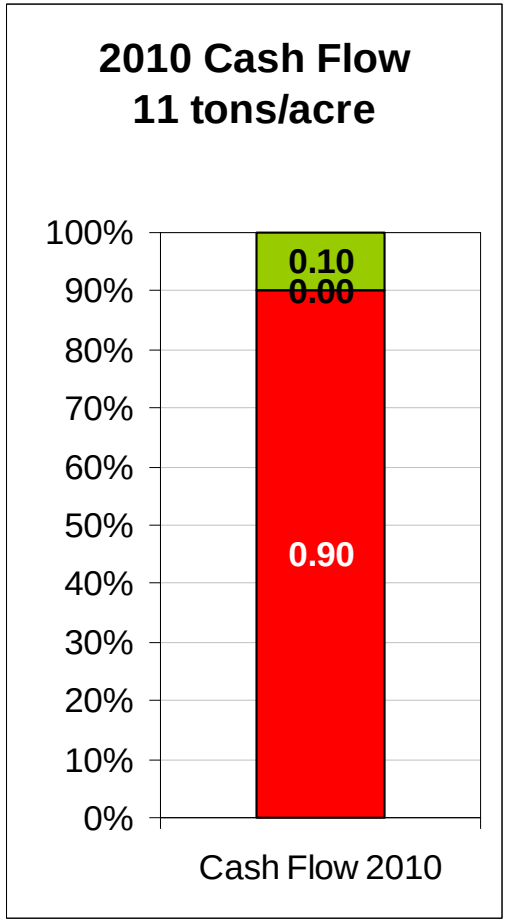


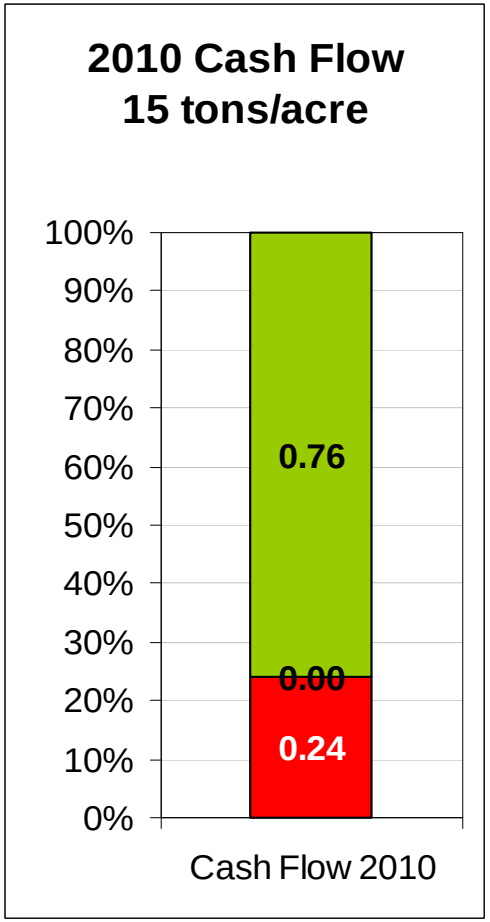




2010 Cash Flow Break Even Analysis
100% Green
0% Contracted Green Production







’06 – ’10 Net Present Value Break Even Analysis
100% Green
0% Contracted Green Production