

# **Adjusted Gross Revenue Insurance: New England Case Study 2**

## **Yankee Valley Farm**

### **Wholesale Vegetable and Tobacco Operation**

#### **Farm Description**

- *History*

Yankee Valley Farm has been a family vegetable operation for nearly 70 years. The current proprietor's father began as a sharecropper in the late 1920s. In 1936, the father purchased 60 acres of land on which he produced primarily onions. From 1936 to 1955, the father expanded Yankee Valley Farm to 100 tillable acres and replaced onions with potatoes, cabbage, squash and tobacco. By mid 50s, tobacco was no longer planted and as a consequence, additional vegetable crops gradually entered the farm enterprise mix. Sweet corn, potatoes, peppers, tomatoes and squash were the principal crops grown through the 1960s. In the 1970s and 1980s, many of these same crops continued to be produced on the farm with cabbage, cucumbers, cauliflower and pumpkins added to the mix at different times.

In 1968, farm ownership was transferred to the son. At that time, Yankee Valley Farm was selling vegetables to supermarket buyers and at the Springfield wholesale market. Limited products were also being sold through the farm's traditional channels - processors and the Boston wholesale market. By 1980, the Springfield market and processors were no longer important channels for Yankee Valley Farm. Sales made directly to supermarket buyers became the major outlet, with the Boston market serving as the secondary outlet.

- *Past Ten Years*

In terms of acreage, the major crops grown over the past 10 years have been sweet corn, pumpkins and squash. Cucumbers, tomatoes and peppers also continue to be planted. The most notable addition to the enterprise mix in recent years is tobacco. Tobacco has been grown on 20 acres of rented land for the past four years. The proprietor uses conventional growing techniques and does not irrigate any crops.

Supermarket buyers and the Boston wholesale market are the primary and secondary wholesale channels, respectively, for Yankee Valley Farm's vegetable crops. Half of the winter squash production is typically peeled, cut and packaged prior to sale. If winter squash production is low, some may be bought in to meet buyer demands. Tobacco company buyers bid on the crop in the fall after a few months of drying and take delivery before year-end.

- *Insurance History*

Even though Yankee Valley Farm soils are among the best in the eastern states, the proprietor experiences variable yields when growing conditions are either excessively dry or wet. He missed the opportunity to participate in the Adjusted Gross Revenue insurance pilot program last year and would like to evaluate program costs and coverage options for 2001.

Over the past few years, Yankee Valley Farm has purchased crop insurance for tobacco. Last year's crop was nearly 90% lost due to blue mold brought on by cool, wet weather and

as a result, anticipates indemnity payments this spring. Despite the poor yield in 2000, the proprietor will continue to grow tobacco based on his careful evaluation of its potential economic benefit. He also intends to purchase tobacco insurance.

## **Application**

- ***Eligibility***

Yankee Valley Farm meets all of the eligibility tests to participate. All New England counties are included in the pilot program area. The business has been operated as a sole proprietorship under the same owner since 1968. Minimal income is received from resale items and no income is derived from animals or animal products. Although less than 50% of income will come from tobacco, multi-peril crop insurance for tobacco will be purchased.

- ***Cropping and Revenue History***

Yankee Valley Farm's cropping history is reported on attached Form 823, Agricultural Commodity Profile. Also attached are copies of the proprietor's 1995 through 1999, 1040 Schedule F forms. The proprietor reports business income and expenses to the IRS on a cash basis over a calendar year accounting period. Small amounts of vegetables are often purchased for resale. The purchase costs are subtracted from the gross sales amount. (Processing supplies used to cut and repackage squash are listed separately under "other expenses.")

Often a small amount of product inventory, usually winter squash, is carried over into the succeeding year. Year-end value of winter squash is typically between \$10,000 and \$15,000. At the end of 2000 and start of 2001, the value of squash in storage was only \$8,000 (1,000 boxes) due to poor yields in 2000.

Prior to growing tobacco, Yankee Valley Farm's annual gross receipts were averaging about \$350,000. In 1998 and 1999, gross receipts increased to \$433,300 and \$466,630 largely due to tobacco sales.

- ***Planting Intentions and AGR Calculations***

Planting intentions for Yankee Valley Farm in 2001 are provided on attached Form 821. There are no anticipated changes in the types of vegetable crops to be planted when compared to the past five years; however, the steady growth in sweet corn and winter squash acres will continue, while tomato and pepper acres will be decreased. Total expected income is \$467,000 for 2001.

Based on Yankee Valley Farm's Schedule F forms for 1995 to 1999, average allowable income is \$391,292. This calculation is shown on Form 821. Since 1998 and 1999 allowable incomes exceed the five year average, the average AGR may be adjusted upward by an income trend factor. The income trend is determined using the following procedure:

1. 1996 allowable income / 1995 allowable income = 0.973  
1997 allowable income / 1996 allowable income = 1.101  
1998 allowable income / 1997 allowable income = 1.139  
1999 allowable income / 1998 allowable income = 1.075

2. Average index factor =  $(0.973 + 1.101 + 1.139 + 1.075) / 4 = 1.072$
3. Income trend factor =  $(1.072)^4 = 1.321$

Using this income trend factor, the farm's average AGR is increased to \$516,898; however, this amount is higher than the expected income for 2001 based on the intended plantings. The farm's preliminary AGR will therefore be based on the expected income calculation of \$467,000.

- ***Possible Coverage Election***

The proprietor will choose the level of AGR coverage and payment rate desired. The choices available follow:

- 65% coverage level with a 75% or 90% payment rate
- 75% coverage level with a 75% or 90% payment rate
- 80% coverage level with a 75% or 90% payment rate

Yankee Valley Farm qualifies for the 75% and 80% coverage levels because it meets the commodity diversification requirements. Diversification requirements are based on the number of commodities produced and their contributions to gross income. The dollar amount of contribution is determined by multiplying expected allowable income for the insurance year by 1 over the total number of commodities times 0.33. For 75% coverage, two commodities produced by Yankee Valley Farm must contribute at least \$22,016 to gross income in 2001. For 80% coverage, four commodities must contribute \$22,016 to gross income.

AGR losses begin when the adjusted gross income for the insured year is less than the product of the selected coverage level and the approved AGR. At the 80% level, Yankee Valley Farm's adjusted gross income for 2001 must fall below \$373,600 ( $\$467,000 \times .80$ ) to trigger payment; at the 75% and 65% levels, income must fall below \$350,250 and \$303,550, respectively. The payment to the producer is the revenue shortfall times the payment rate selected.

- ***Premium and Closing Date***

The AGR pilot program is available in every county throughout New England. As an incentive to purchase the AGR insurance, RMA offers a substantial subsidy towards the premium cost. Since Yankee Valley Farm intends to purchase MPCCI for tobacco, AGR insurance costs should be adjusted downward to reflect the reduced risk.

The sales closing date is January 31, 2001 for the 2001 insurance year.

## Risks and Income Scenarios

- **Production Risks**

In the past, dry years would result in a 30 to 35% loss in production of squash, pumpkins and sweet corn. Dry years occur once or twice every 10 years.

Excessive moisture and cold weather can lead to delayed planting, poor germination, poor pollination and increased disease problems in all crops. In 2000, the unusual rainy weather throughout the growing season resulted in substantial decreases in saleable yields of individual crops. Tobacco was down by 90%, squash and pumpkins were down by 60 to 75%, and sweet corn was down 25 to 50%.

- **Marketing Risks**

Yankee Valley Farm sells products wholesale primarily to supermarket buyers. The Boston wholesale market is a secondary outlet. Wholesale prices paid by area supermarkets and in Boston have remained unchanged for many years. Occasionally, individual crops may command a higher price due to a lack of availability or local promotion efforts, but the higher price is short lived. In an attempt to improve net income, Yankee Valley Farm peels and cuts a portion of its winter squash crop each year.

Tobacco prices in recent years have been as high as \$10 per pound and as low as \$4 per pound. Competition, availability and market demand play important roles in the prices offered to growers.

- **Income Scenarios**

Yankee Valley Farm is likely to sign up for the 80% or 75% coverage level. The proprietor would like to review the insurance payments made under various revenue shortfalls in 2001. If allowable expenses do not fall below 70% of approved expenses, various outcomes are shown below:

2001 Revenue	Revenue Loss (%)	80% Coverage		75% Coverage	
		75% Payout	90% Payout	75% Payout	90% Payout
\$ 373,600	\$ 93,400 (20%)	\$ 0	\$ 0	\$ 0	\$ 0
326,900	140,100 (30%)	35,025	42,030	17,513	21,015
280,200	186,800 (40%)	70,050	84,060	52,538	63,045
233,500	233,500 (50%)	105,075	126,090	87,563	105,075



Form 821		UNITED STATES DEPARTMENT OF AGRICULTURE						
Federal Crop Insurance Corporation								
ANNUAL FARM REPORT								
PRODUCER INFORMATION								
YANKEE VALLEY FARM								
ADJUSTED GROSS REVENUE (AGR) REPORT				INTENDED COMMODITY REPORT				
Tax Year	Allowable Income	Allowable Expenses	Commodity Name/Code	No. Years Produced	Intended Amount	Total Amount	Expected Value	Dollars
			Sweet corn 0042					
1995	350,800	243,680	Wholesale	32	50 acres	11,000 bags	8.00	88,000
1996	341,480	230,760	Pumpkins 0605					
1997	375,900	236,330	Wholesale	32	15 acres	300,000 lbs	0.15	45,000
1998	428,150	278,920	Winter squash 0065					
1999	460,130	307,350	Wholesale	32	26 acres	10,400 boxes	8.00	83,200
			Cucumbers 0603					
			Wholesale	32	2 acres	700 bushels	14.00	9,800
			Tomatoes 0087					
			Wholesale	32	2 acres	2,000 boxes	9.00	18,000
			Peppers 0627					
			Wholesale	32	5 acres	5,000 boxes	10.00	50,000
			Tobacco 0236					
			Wholesale	4	20 acres	28,000 lbs	6.00	168,000
			Purchases for resale (net)					5,000
<b>AVERAGE</b>	<b>391,292</b>	<b>259,408</b>	<b>Total Number Commodities</b>	<b>7</b>	<b>Total Expected Income</b>		<b>467,000</b>	
<b>ADJUSTMENT</b>		<b>PRELIMINARY AGR</b>			<b>APPROVED AGR</b>			
<b>\$ 391,292 x (1.072)<sup>4</sup> = 516,898</b>		<b>\$ 467,000</b>			<b>\$</b>			

**Schedule F****Profit or Loss From Farming****1995**

**Name of Proprietor** *Yankee Valley Farm* **SSN** XXXXXXXX

**A. Principal product** *Whsle Vegetable & Tobacco*

**C. Accounting method** *Cash*

**Part 1 Farm Income - Cash Method**

1. Sales of livestock or other items you bought for resale	\$ 10,800	
2. Cost or other basis of livestock and other items reported on line 1	8,000	
3. Subtract line 2 from line 1		\$ 2,800
4. Sales of livestock, produce, grains and other products you raised		351,000
5a. Total cooperative distributions	5b. Taxable amount	0
6a. Agricultural program payments	6b. Taxable amount	2,000
7. Commodity Credit Corporation loans		
a. CCC loans reported under election		0
b. CCC loans forfeited	7c. Taxable amount	0
8. Crop insurance proceeds and certain disaster payments		
a. Amount received in 1995	8b. Taxable amount	0
c. If election to defer to 1996 is attached, check	8d. Deferred from 1994	0
9. Custom hire (machine work) income		0
10. Other income inc. Federal and State gasoline or fuel tax credit or refund		2,400
<b>11. Gross Income</b>		<b>\$ 358,200</b>

**Part 2 Farm Expenses – Cash and Accrual Method**

12. Car and truck expenses	\$ 8,620	25. Pension and profit-sharing plans	\$ 0
13. Chemicals	12,250	26. Rent or lease	
14. Conservation expenses	0	a. Vehicles, machinery & equipment	6,990
15. Custom hire (machine work)	0	b. Other (land, animals, etc.)	0
16. Depreciation	21,420	27. Repairs and maintenance	13,450
17. Employee benefit programs	0	28. Seeds and plants purchased	25,510
18. Feed purchased	0	29. Storage and warehousing	0
19. Fertilizer and lime	25,340	30. Supplies purchased	46,020
20. Freight and trucking	1,510	31. Taxes	12,040
21. Gasoline, fuel, and oil	7,220	32. Utilities	4,700
22. Insurance (other than health)	7,730	33. Veterinary, breeding and medicine	0
23. Interest:		34. Other Expenses (specify)	
a. Mortgage (paid to banks, etc.)	} 11,460	a. <i>Processing supplies</i>	3,000
b. Other		b. <i>Professional fees/services</i>	6,200
24. Labor hired	72,550	c. <i>Other</i>	12,580
<b>35. Total Expenses</b>			<b>\$ 298,590</b>
<b>36. Net Farm Profit or (loss)</b>			<b>\$ 59,610</b>

**Schedule F****Profit or Loss From Farming****1996**Name of Proprietor *Yankee Valley Farm* SSN XXXXXXXXA. Principal product *Whsle Vegetables & Tobacco*C. Accounting method *Cash***Part 1 Farm Income - Cash Method**

1. Sales of livestock or other items you bought for resale		\$ 4,050
2. Cost or other basis of livestock and other items reported on line 1		3,000
3. Subtract line 2 from line 1		\$ ,050
4. Sales of livestock, produce, grains and other products you raised		343,980
5a. Total cooperative distributions	5b. Taxable amount	0
6a. Agricultural program payments	6b. Taxable amount	0
7. Commodity Credit Corporation loans		
a. CCC loans reported under election		0
b. CCC loans forfeited	7c. Taxable amount	0
8. Crop insurance proceeds and certain disaster payments		
a. Amount received in 1996	8b. Taxable amount	0
c. If election to defer to 1997 is attached, check	8d. Deferred from 1995	0
9. Custom hire (machine work) income		0
10. Other income inc. Federal and State gasoline or fuel tax credit or refund		500
<b>11. Gross Income</b>		<b>\$ 345,530</b>

**Part 2 Farm Expenses – Cash and Accrual Method**

12. Car and truck expenses	\$ 8,110	25. Pension and profit-sharing plans	\$ 0
13. Chemicals	12,510	26. Rent or lease	
14. Conservation expenses	0	a. Vehicles, machinery & equipment	5,630
15. Custom hire (machine work)	0	b. Other (land, animals, etc.)	0
16. Depreciation	20,320	27. Repairs and maintenance	11,820
17. Employee benefit programs	0	28. Seeds and plants purchased	23,980
18. Feed purchased	0	29. Storage and warehousing	0
19. Fertilizer and lime	23,350	30. Supplies purchased	43,380
20. Freight and trucking	1,450	31. Taxes	12,050
21. Gasoline, fuel, and oil	6,790	32. Utilities	4,420
22. Insurance (other than health)	7,210	33. Veterinary, breeding, medicine	0
23. Interest:		34. Other Expenses (specify)	
a. Mortgage (paid to banks, etc.)	} 11,830	a. <i>Processing supplies</i>	3,550
b. Other		b. <i>Professional fees/services</i>	5,100
24. Labor hired	68,140	c. <i>Other</i>	14,500
<b>35. Total Expenses</b>			<b>\$ 284,140</b>
<b>36. Net Farm Profit or (loss)</b>			<b>\$ 61,390</b>

**Schedule F****Profit or Loss From Farming****1997**Name of Proprietor *Yankee Valley Farm* SSN XXXXXXXXA. Principal product *Whlse Vegetable & Tobacco*C. Accounting method *Cash***Part 1 Farm Income - Cash Method**

1. Sales of livestock or other items you bought for resale		\$ 13,500
2. Cost or other basis of livestock and other items reported on line 1		10,000
3. Subtract line 2 from line 1		\$ 3,500
4. Sales of livestock, produce, grains and other products you raised		376,600
5a. Total cooperative distributions	5b. Taxable amount	0
6.a Agricultural program payments	6b. Taxable amount	3,400
7. Commodity Credit Corporation loans		
a. CCC loans reported under election		0
b. CCC loans forfeited	7c. Taxable amount	0
8. Crop insurance proceeds and certain disaster payments		
a. Amount received in 1997	8b. Taxable amount	0
c. If election to defer to 1998 is attached, check	8d. Deferred from 1996	0
9. Custom hire (machine work) income		0
10. Other income inc. Federal and State gasoline or fuel tax credit or refund		0
<b>11. Gross Income</b>		<b>\$ 383,500</b>

**Part 2 Farm Expenses – Cash and Accrual Method**

12. Car and truck expenses	\$ 8,510	25. Pension and profit-sharing plans	\$ 0
13. Chemicals	12,090	26. Rent or lease	
14. Conservation expenses	0	a. Vehicles, machinery & equipment	5,910
15. Custom hire (machine work)	0	b. Other (land, animals etc.)	3,140
16. Depreciation	22,190	27. Repairs and maintenance	10,310
17. Employee benefit programs	0	28. Seeds and plants purchased	25,170
18. Feed purchased	0	29. Storage and warehousing	0
19. Fertilizer and lime	24,520	30. Supplies purchased	43,450
20. Freight and trucking	1,650	31. Taxes	12,610
21. Gasoline, fuel, and oil	7,130	32. Utilities	4,640
22. Insurance (other than health)	7,610	33. Veterinary, breeding and medicine	0
23. Interest:		34. Other Expenses (specify)	
a. Mortgage (paid to banks, etc.)	} 11,340	a. <i>Processing supplies</i>	4,200
b. Other		b. <i>Professional fees/services</i>	5,800
24. Labor hired	74,920	c. <i>Other</i>	10,530
<b>35. Total Expenses</b>			<b>\$ 295,720</b>
<b>36. Net Farm Profit or (loss)</b>			<b>\$ 87,780</b>

**Schedule F****Profit or Loss From Farming****1998**

**Name of Proprietor** *Yankee Valley Farm* **SSN** XXXXXXXX

**A. Principal product** *Whsle Vegetable & Tobacco*

**C. Accounting method** *Cash*

**Part 1 Farm Income - Cash Method**

1. Sales of livestock or other items you bought for resale		\$ 12,150	
2. Cost or other basis of livestock and other items reported on line 1		9,000	
3. Subtract line 2 from line 1			\$ 3,150
4. Sales of livestock, produce, grains and other products you raised			430,000
5a. Total cooperative distributions	5b. Taxable amount		0
6a. Agricultural program payments	6b. Taxable amount		0
7. Commodity Credit Corporation loans			
a. CCC loans reported under election			0
b. CCC loans forfeited	7c. Taxable amount		0
8. Crop insurance proceeds and certain disaster payments			
a. Amount received in 1998	8b. Taxable amount		0
c. If election to defer to 1999 is attached, check	8d. Deferred from 1997		0
9. Custom hire (machine work) income			0
10. Other income inc. Federal and State gasoline or fuel tax credit or refund			150
<b>11. Gross Income</b>			<b>\$ 433,300</b>

**Part 2 Farm Expenses – Cash and Accrual Method**

12. Car and truck expenses	\$ 10,390	25. Pension and profit-sharing plans	\$ 0
13. Chemicals	14,750	26. Rent or lease	
14. Conservation expenses	0	a. Vehicles, machinery & equipment	7,220
15. Custom hire (machine work)	0	b. Other (land, animals, etc.)	5,050
16. Depreciation	24,190	27. Repairs and maintenance	13,580
17. Employee benefit programs	0	28. Seeds and plants purchased	30,710
18. Feed purchased	0	29. Storage and warehousing	0
19. Fertilizer and lime	29,910	30. Supplies purchased	53,010
20. Freight and trucking	1,220	31. Taxes	13,100
21. Gasoline, fuel, and oil	8,690	32. Utilities	6,060
22. Insurance (other than health)	10,510	33. Veterinary, breeding and medicine	0
23. Interest:		34. Other Expenses (specify)	
a. Mortgage (paid to banks, etc.)	} 12,400	a. <i>Processing supplies</i>	5,000
b. Other		b. <i>Professional fees/services</i>	6,100
24. Labor hired	84,690	c. <i>Other</i>	9,300
<b>35. Total Expenses</b>			<b>\$ 345,880</b>
<b>36. Net Farm Profit or (loss)</b>			<b>\$ 87,420</b>

**Schedule F****Profit or Loss From Farming****1999**

Name of Proprietor *Yankee Valley Farm* SSN XXXXXXXX

A. Principal product *Whsle Vegetable & Tobacco*

C. Accounting method *Cash*

**Part 1 Farm Income - Cash Method**

1. Sales of livestock or other items you bought for resale		\$ 14,850	
2. Cost or other basis of livestock and other items reported on line 1		11,000	
3. Subtract line 2 from line 1			\$ 3,850
4. Sales of livestock, produce, grains and other products you raised			461,780
5a. Total cooperative distributions	5b. Taxable amount		0
6a. Agricultural program payments	6b. Taxable amount		500
7. Commodity Credit Corporation loans			
a. CCC loans reported under election			0
b. CCC loans forfeited	7c. Taxable amount		0
8. Crop insurance proceeds and certain disaster payments			
a. Amount received in 1999	8b. Taxable amount		0
c. If election to defer to 2000 is attached, check	8d. Deferred from 1998		0
9. Custom hire (machine work) income			0
10. Other income inc. Federal and State gasoline or fuel tax credit or refund			1,000
<b>11. Gross Income</b>			<b>\$ 467,130</b>

**Part 2 Farm Expenses – Cash and Accrual Method**

12. Car and truck expenses	\$ 11,320	25. Pension and profit-sharing plans	\$ 0
13. Chemicals	16,070	26. Rent or lease	
14. Conservation expenses	0	a. Vehicles, machinery & equipment	13,700
15. Custom hire (machine work)	0	b. Other (land, animals, etc.)	7,900
16. Depreciation	26,200	27. Repairs and maintenance	13,720
17. Employee benefit programs	0	28. Seeds and plants purchased	33,480
18. Feed purchased	0	29. Storage and warehousing	0
19. Fertilizer and lime	32,600	30. Supplies purchased	59,780
20. Freight and trucking	1,720	31. Taxes	14,200
21. Gasoline, fuel, and oil	9,500	32. Utilities	6,670
22. Insurance (other than health)	11,450	33. Veterinary, breeding and medicine	0
23. Interest:		34. Other Expenses (specify)	
a. Mortgage (paid to banks, etc.)	} 12,450	a. <i>Processing supplies</i>	5,500
b. Other		b. <i>Professional fees/services</i>	6,450
24. Labor hired	93,220	c. <i>Other</i>	11,370
<b>35. Total Expenses</b>			<b>\$ 387,300</b>
<b>36. Net Farm Profit or (loss)</b>			<b>\$ 79,830</b>