

**AGR Case Study
Onion Farm
Pine Island
Orange County, New York**

Prepared by

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An Adjusted Gross Revenue (AGR) Insurance Analysis For Joe Farmer, Pine Island, Orange County, New York

Farm Description

- *Farming History*

This is a hypothetical, but representative, onion operation in Pine Island, NY. The business is a proprietorship owned by Joe Farmer (age 55). His son is employed fulltime in the operation and works for a salary. Seasonal employees are hired during the growing season on a part-time basis, and stay on to help grade the crop in the fall. Joe Farmer's wife helps grade onions during the fall and winter months. The land base includes 57 acres of good quality Carlisle Muck. The operation rents an additional 38 acres of adjacent land for \$200 per acre. Buildings include a bulk onion storage, with attached packinghouse, bin storage, shop, labor camp and machine storage building. The packinghouse is used only to remove defective and undersized onions, so there is no value received from post-production products. The operation has a full line of tillage, harvest and grading equipment.

Over the years, this operation has been successful, and Joe Farmer has made a good living. However the last five years have been challenging. The increasing production of Mexican onions has cut into storage onion proceeds and shortened the season. The operation has sold an average of 482 bags per acre over the last five years compared to the 15-year average of 566 bags per acre. Joe attributes the reduction in production over the last 5 years to weather. The operation has experienced accrual losses in two of the last five years, including 1999. Joe is concerned about the future and his son is beginning to question whether he wants to try and buy the business given the uncertainties. He is interested in Adjusted Gross Revenue Insurance as a strategy to reduce risk.

Yield, price and receipts information for the prior 10 years is as follows:

Year	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Bags sold/Acre	745	653	553	504	583	538	838	519	561	592
Price/Bag (\$)	4.28	6.93	7.23	6.25	5.49	5.26	6.67	6.48	8.11	4.92
Av. Rec/Ac(\$)	3189	4525	3856	3150	3201	2830	5589	3363	4550	2913

As can be seen from the above data, gross receipts per acre farmed varied from a low of \$2830 in 1990 to a high of 5589 in 1991, a two-fold increase! Price over that time period varied from 4.28 in 1985 to 8.11 in 1993.

In the last five years, yield, price, and average onion receipts have been as follows:

Year	1995	1996	1997	1998	1999	5-yr. Average
Bags sold/Acre	564	604	524	467	250	482
Price/Bag (\$)	4.28	4.84	4.25	6.45	4.88	4.94
Total Rec/ Acre(\$)	2,414	2,923	2,227	3,012	1,220	\$2,359

- ***Insurance History***

Joe has purchased Crop insurance for his onions over the past several years (CAT coverage). With a yield of only 250 cwt. per acre in 1999, his crop insurance coverage resulted in crop insurance proceeds of \$11,685 and he also received \$27,060 in Federal disaster payments.

Application

To be eligible for AGR coverage, Joe Farmer must have less than 50% of the allowable income from agricultural commodities purchased for resale and less than 50% of the allowable income from insurable crop & livestock commodities, unless such commodities are insured under other available insurance. Prior to applying for AGR coverage, it is necessary to prepare Form FCIC-18050 – Adjusted Gross Revenue Application Continuous Contract; copies of the tax return forms from five consecutive tax years prior to the year immediately preceding the insurance year (2001) – Form 1040-Schedule F; Form 821-AGR - Annual Farm Report; Form AGR-823- Agricultural Commodity Profile; and the beginning inventory (Form AGR-822).

Revenue History

To apply for AGR coverage, Joe Farmer must furnish a summary of the cropping history over the five most recent years and five consecutive tax years of allowable income prior to the year immediately preceding the insurance year (2001). The attached AGR – Form 823 – Agricultural Commodity Profile shows the five-year cropping history (1995 – 1999). See Table 1 for Joe Farmer’s five-year allowable income and expenses history. Copies of the Form 1040 – Schedule F for the years 1995 through 1999 are also attached to the end of document.

Table 1. Joe Farmer's Five-Year Allowable Income and Allowable Expenses History

	<i>Schedule F</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>	<i>1999</i>
Allowable Income						
Sales of animals and other ag commodities bought for resale less the cost or other basis	line 3	0	0	0	0	0
Sales of animals, produce, and other ag commodities raised	line 4 (Adjusted) ¹	216,454	301,294	218,106	294,209	206,270
Taxable amount of total cooperative distributions						
Agricultural program payments	line 5b	0	0	4,300	0	0
Commodity Credit Corporation (CCC) loans	line 7a	0	0	0	0	0
Taxable amount of CCC loans forfeited	line 7c	0	0	0	0	0
Other income - exclude gas/fuel tax credits	line 10	14,100	12,650	11,800	13,700	12,500
Total Allowable Income		230,554	313,944	234,206	307,409	218,770
Allowable Expenses						
The cost of items bought for resale	line 2	0	0	0	0	0
Car and truck expenses	line 12	0	0	0	0	0
Chemicals	line 13	38,000	41,600	43,500	40,800	35,055
Conservation	line 14	0	0	0	0	0
Custom hire (machine work)	line 15	3,600	4,250	5,250	3,750	4,000
Depreciation and Sect. 179 exp. Incl. Only the dep. Allowed for animals.	line 16 (Adjusted) ²	0	0	0	0	0
Feed purchased	line 18	0	0	0	0	0
Fertilizer and lime	line 19	12,100	11,500	11,300	11,650	8,364
Freight and trucking	line 20	0	330	740	0	431
Gasoline, fuel and oil	line 21	6,020	6,950	5,200	5,900	5,670
Insurance (other than health)	line 22	14,450	14,010	13,665	13,950	14,950
Labor hired (less employment credits)	line 24 (Adjusted) ³	51,650	52,750	51,400	46,450	44,380
Repair and maintenance	line 27	8,500	10,300	10,600	5,150	6,110
Seeds and plants purchased	line 28	21,450	18,700	19,855	21,600	21,894
Storage and warehousing	line 29	0	0	0	0	0
Supplies purchased ⁴	line 30 (Adjusted) ⁴	6,700	7,830	8,100	7,458	7,503
Utilities	line 32	7,700	7,650	8,560	7,840	7,811
Veterinary, breeding, and medicine	line 33	0	0	0	0	0
Other farm expenses	line 34	4,630	7,840	8,100	5,430	4,613
Total Allowable Expenses		175,231	183,330	186,270	170,300	160,350

¹ Gross income adjusted for added value received for post-production operations such as processing, packing, packaging, etc.

² Include only the amount of depreciation allowed for animals.

³ Exclude share holder wages if reported on this line.

⁴ Exclude those used in post-production value added operations such as processing, packing, packaging, etc.

AGR Calculation

To determine the revenue that will be covered by the AGR insurance plan, the average of the allowable income for the five consecutive years prior to the year immediately preceding the insurance year needs to be calculated. The average was \$261,077. Since Joe Farmer's allowable income in 1998 (\$307,409) exceeds the average allowable income, he may use the trend adjustment factor, if it is less than Total Expected Income Projected in the Annual Farm Report (AGR Form 821). The trend adjustment is calculated as follows:

- Divide each tax year's allowable income by the preceding tax year's allowable income. The factor may not exceed 1.200 (20% cap) or be less than 0.800 (20% cup). Therefore:

	<u>Indexed factor</u>
1. 1996 allowable income \$313,944 /1995 allowable income \$230,554 = 1.362	1.200
2. 1997 allowable income \$234,206 /1996 allowable income \$313,944 = .746	.800
3. 1998 allowable income \$307,909 /1997 allowable income \$234,206 = 1.315	1.200
4. 1999 allowable income \$218,770 /1998 allowable income \$307,909 = .711	.800
5. Average Indexed Factor = 1.000	
6. Income Trend Factor = (Average Indexed Factor) ⁴ = 1.000 ⁴ = 1.000	
7. The Adjusted Revenue = Average Allowable Income x Income Trend Factor = \$261,077 x 1.000 = \$261,077	

The attached Annual Farm Report (Form 821-AGR) also contains Joe Farmer's estimate of acreage, yields, and prices for the insurance year. Insurance levels will be based on the *lesser* of the trend adjusted AGR or the Expected Income from the Report. Joe Farmer's expected income from the Intended Commodity Report is \$249,375. Therefore, Joe Farmer's approved AGR is \$249,375 since it is less than the adjusted revenue.

Average allowable expenses must be adjusted as well. Since the Approved AGR is less than the Average AGR from the farm's AGR history, expenses are modified (reduced) as follows:

$$\text{Approved allowable expenses} = (\text{Approved AGR} \div \text{Average allowable income}) * \text{Average allowable expenses} = (249,375 \div 261,077) * 175,096 = \$167,248.$$

Possible Coverage Elections

Amount of Coverage: The amount of AGR coverage will be elected by the insured. There is only one option for Joe Farmer, but below are the total options.

1. 80/75 = 80% coverage level with a 75% payment rate.
2. 75/75 = 75% coverage level with a 75% payment rate
3. 65/75 = 65% coverage level with a 75% payment rate
4. 80/90 = 80% coverage level with a 90% payment rate.
5. 75/90 = 75% coverage level with a 90% payment rate
6. 65/90 = 65% coverage level with a 90% payment rate

Joe Farmer does not meet the diversification requirements since he only produces one commodity (onions). Therefore he can only select option 3, (65/75). In future years, he must sign up for multi-peril crop insurance as well.

AGR losses begin with when the income to count for the insurance year is less than the product of multiplying the percentage for the coverage level elected times the Approved AGR. The payment rate is the percentage of the revenue deficiency that will then be paid by the insurance provider.

- **Joe Farmer's insurance scenario is as follows:**

Elected coverage	Coverage level	Payment rate	Approved AGR	Loss payment begins when income lower than
65/75	65%	75%	\$ 249,375	\$ 162,094

Annual Premium and Administrative Fee

RMA will offer a cost-share program as an incentive to producers in eleven under served northeastern states to purchase AGR insurance. It will be available to New York producers located in the following counties - Cayuga, Chautauqua, Erie, Genesee, Monroe, Niagara, Onondaga, Ontario, Orange, Orleans, Oswego, Seneca, Suffolk, Ulster, Wayne, and Yates.

Under this cost-share program, RMA will share in 50 percent of the premium cost of a producer's AGR policy. This 50 percent cost-share will be calculated on the premium remaining after the standard premium subsidy for AGR, as authorized under section 508 (e) of the Federal Crop Insurance Act, is applied. In addition, RMA will pay the entire administrative fee (\$30 per policy) for producers who purchase AGR policies in the eligible states and counties. **The sales closing date for all states with AGR insurance is January 31, 2001.** Information needed to calculate the annual premium includes five-year allowable income and allowable expenses prior to the year immediately preceding the insurance year and the intended commodity list for the insurance year.

The Event of Damage or Loss

Insurance is provided against loss of revenue due to any unavoidable peril that causes a loss in revenue during the current insurance year. In the event of probable loss, the insured farm must provide the following:

- A notice of loss within 72 hours of the initial discovery that the allowable income for the insurance year could fall below the amount determined by the coverage level elected. Such notice will not be accepted later than 15 days after the filing of farm tax forms for the insurance year;
- A copy of the farm tax forms and any amendments for the insurance year and any additional documentation required to convert the allowable income and allowable expenses for the insurance year to an *accrual accounting method*.

Joe Farmer has to file the AGR – Form 822 – Inventory and Accounts Receivable Report because he did have agricultural commodity inventory or account receivables at the beginning and the end of the insured year. The AGR – Form 822 is required to calculate allowable income to count on an accrual basis when an indemnity is claimed. See page 14 for a sample Form 822.

- When an insured's accounts receivables increase, cash basis allowable income for the insurance year will be increased by the increase in accounts receivables.
- When an insured's accounts receivables decrease, cash basis allowable income for the insurance year will be decreased by the decrease in accounts receivables.

Similar adjustments are made for crops in storage (inventory).

If the allowable expenses for the insurance year fall below 70% of the approved expenses, reduce the result of approved AGR by 0.1% for each 0.1% the allowable expenses for the insurance year fall below 70% of the approved expenses.

Loss Scenarios:

Assume that Joe Farmer has another year in 2001 such as occurred in 1999, when yields fell to 250 bags per acre. Assume a low price of \$4.50 per bag. Cash receipts from onions would fall to 95 acres x 250 bags x \$4.50 = 106,875. Assume that other allowable income would be \$13,125, for a total of 120,000.

With 65/75 coverage, the loss begins when allowable income falls below $\$249,375 \times 65\% = \$162,094$. In this case the revenue deficiency is $\$162,094 - 120,000 = \$42,094$. The AGR payment is $\$42,094 \times 75\% = \$31,571$. Thus total revenue after insurance is $\$120,000 + 31,571 = \$151,571$. This amount would be adjusted for any MPCCI payments.

Table 2 shows the possible revenue losses, insurance payments, and corresponding revenues assuming that the allowable expenses for the insurance year did not fall below 70% of the approved expenses.

Table 2 Income Scenarios When Income Loss Occurs Under AGR Insurance

Revenue Loss	No Insurance	Coverage Election	
		65/75	
	<i>Revenue</i>	<i>Payment</i>	<i>Revenue</i>
		<u>Dollars (\$)</u>	
20%	199,500	0	199,500
30%	174,563	0	174,563
40%	149,625	9,352	158,977
50%	124,688	28,055	152,742
60%	99,750	46,758	146,508
70%	74,813	65,461	140,273
80%	49,875	84,164	134,039
90%	24,938	102,867	127,805
100%	0	121,570	121,570

Assuming the allowable expenses are lower because of reduced expenses of harvesting, gasoline and oil, utilities, etc., due to crop loss. Assuming the allowable expenses for the insurance is \$108,711 or 65 percent of approved allowable expenses (\$167,248). The allowable expenses are 5 percent less than 70 percent. Therefore, the Approved AGR (\$249,375) is reduced by 5 percent to \$236,906.

Table 3 shows the possible income losses, insurance payments adjusted for lower allowable expenses (assuming 65% of approved expenses), and corresponding revenues.

Table 3 Income Scenarios When Income Loss Occurs and Allowable Expenses Falls Below 70% of Approved Expenses Under AGR Insurance

Revenue Loss	No Insurance	Coverage Election	
		65/75	
	<i>Revenue</i>	<i>Payment</i>	<i>Revenue</i>
		<u>Dollars (\$)</u>	
20%	199,500	0	199,500
30%	174,563	0	174,563
40%	149,625	3,273	152,898
50%	124,688	21,976	146,664
60%	99,750	40,679	140,429
70%	74,813	59,382	134,195
80%	49,875	78,085	127,960
90%	24,938	96,789	121,726
100%	0	115,492	115,492

UNITED STATES DEPARTMENT OF AGRICULTURE

Federal Crop Insurance Corporation

ANNUAL FARM REPORT – Form 821

PRODUCER INFORMATION								
Joe Farmer								
ADJUSTED GROSS REVENUE (AGR) REPORT			INTENDED COMMODITY REPORT					
			<i>Commodity Name/Code</i>	<i># Years Produced</i>	<i>Intended Amount</i>	<i>Total Amount</i>	<i>Expected Value</i>	<i>Dollars</i>
<i>Tax Year</i>	<i>Allowable Income</i>	<i>Allowable Expenses</i>	Onions-0013					
1995	230,554	175,231	Wholesale	21	95 acres	47,500 bags	\$5.25	\$249,375
1996	313,944	183,330						
1997	234,206	186,270						
1998	307,909	170,300						
1999	218,770	160,350						
			Total Number Commodities	1	Total Expected Income		\$	249,375
TOTAL	1,305,383	875,481						
AVERAGE	261,077	175,096						
Adjustment								
1996/1995	1.362	1.200						
1997/1996	0.746	0.800						
1998/1997	1.315	1.200						
1999/1998	0.711	0.800						
Total		4.000						
Average adj.		1.000						
Income trend factor		1.000						
Adjustment		261,077						
Preliminary AGR		261,077						
Approved AGR		249,375						
Total Expected income		249,375						
Approved allowable expenses		167,248						

Schedule F**Profit or Loss From Farming****1995**
XXX-XX-XXXX**Joe Farmer****Vegetables*****Part II Farm Income Cash Method***

Accounting Method Cash

Sales of Livestock, produce, grains and other products you raised		\$216,454
Total Cooperative Distributions		0
Agricultural Program Payments		0
Commodity Credit Corporation (CCC) loans		0
CCC loans reported under election		0
CCC loans forfeited or repaid with certificates		0
Crop Insurance proceeds and certain disaster payments		0
Amount received in current year		0
Custom hire (machine work) income		0
Other Income		\$14,100
Gross Income		\$230,554

Part II Farm Expenses- Cash

Car and truck expense		Pension and profit sharing	\$0
Chemicals	\$38,000	Rent or lease	
Conservation expenses	\$0	Vehicles, mach. and equip.	\$1,500
Custom hire (machine work)	\$3,600	Other (land, animals, etc.)	\$7,600
Depreciation and section 179	\$21,200	Repairs and maintenance	\$8,500
Employee benefit programs	\$0	Seeds and plants purch.	\$21,450
Feed purchased	\$0	Storage and warehousing	\$0
Fertilizers and lime	\$12,100	Supplies purchased	\$6,700
Freight and trucking	\$0	Taxes	\$8,350
Gasoline, fuel and oil	\$6,020	Utilities	\$7,700
Insurance	\$14,450	Veterinary, breeding, etc.	
Interest		Other expenses (specify)	\$4,630
a. Mortgage (paid to banks, etc.)	\$16,200		
b. Other			
Labor hired	\$51,650		
Total expenses			\$229,650
Net farm profit			\$904

Schedule F

Profit or Loss From Farming

1996

XXX-XX-XXXX

Joe Farmer

Vegetables

Part II Farm Income Cash Method

Accounting Method Cash

Sales of Livestock, produce, grains and other products you raised		\$301,294
Total Cooperative Distributions		0
Agricultural Program Payments		0
Commodity Credit Corporation (CCC) loans		0
CCC loans reported under election		0
CCC loans forfeited or repaid with certificates		0
Crop Insurance proceeds and certain disaster payments		0
Amount received in current year		0
Custom hire (machine work) income		0
Other Income		\$12,650
Gross Income		\$313,944

Part II Farm Expenses- Cash

Car and truck expense		Pension and profit shareing	\$0
Chemicals	\$41,600	Rent or lease	
Conservation expenses	\$0	Vehicles, mach. and equip.	\$800
Custom hire (machine work)	\$4,200	Other (land, animals, etc.)	\$6,600
Depreciation and section 179	\$21,900	Repairs and maintenance	\$10,300
Employee benefit programs	\$0	Seeds and plants purch.	\$18,700
Feed purchased	\$0	Storage and warehousing	\$0
Fertilizers and lime	\$11,500	Supplies purchased	\$7,830
Freight and trucking	\$330	Taxes	\$8,500
Gasoline, fuel and oil	\$6,950	Utilities	\$7,650
Insurance	\$14,010	Veterinary, breeding, etc.	
Interest		Other expenses (specify)	\$7,840
a. Mortgage (paid to banks, etc.)	\$14,300		
b. Other			
Labor hired	\$52,750		
Total expenses			\$235,760
Net farm profit			\$78,184

Schedule F

Profit or Loss From Farming

1997
XXX-XX-XXXX

Joe Farmer
Vegetables

Part II Farm Income Cash Method

Accounting Method Cash

Sales of Livestock, produce, grains and other products you raised		\$218,106
Total Cooperative Distributions		0
Agricultural Program Payments		0
Commodity Credit Corporation (CCC) loans		0
CCC loans reported under election		0
CCC loans forfeited or repaid with certificates		0
Crop Insurance proceeds and certain disaster payments		0
Amount received in current year		0
Custom hire (machine work) income		0
Other Income		\$16,100
Gross Income		\$234,206

Part II Farm Expenses- Cash

Car and truck expense		Pension and profit shareing	\$0
Chemicals	\$43,500	Rent or lease	
Conservation expenses	\$0	Vehicles, mach. and equip.	\$1,000
Custom hire (machine work)	\$5,250	Other (land, animals, etc.)	\$6,600
Depreciation and section 179	\$18,100	Repairs and maintenance	\$10,600
Employee benefit programs	\$0	Seeds and plants purch.	\$19,855
Feed purchased	\$0	Storage and warehousing	\$0
Fertilizers and lime	\$11,300	Supplies purchased	\$8,100
Freight and trucking	\$740	Taxes	\$8,540
Gasoline, fuel and oil	\$5,200	Utilities	\$8,560
Insurance	\$13,665	Veterinary, breeding, etc.	
Interest		Other expenses (specify)	\$8,100
a. Mortgage (paid to banks, etc.)	\$13,800		
b. Other			
Labor hired	\$51,400		
Total expenses			\$234,310
Net farm profit			-\$104

Schedule F

Profit or Loss From Farming

1998
XXX-XX-XXXX

Joe Farmer
Vegetables

Part II Farm Income Cash Method

Accounting Method Cash

Sales of Livestock, produce, grains and other products you raised	\$294,209
Total Cooperative Distributions	0
Agricultural Program Payments	0
Commodity Credit Corporation (CCC) loans	0
CCC loans reported under election	0
CCC loans forfeited or repaid with certificates	0
Crop Insurance proceeds and certain disaster payments	0
Amount received in current year	0
Custom hire (machine work) income	0
Other Income	\$13,700
Gross Income	\$307,909

Part II Farm Expenses- Cash

Car and truck expense		Pension and profit shareing	\$0
Chemicals	\$40,800	Rent or lease	
Conservation expenses	\$0	Vehicles, mach. and equip.	\$900
Custom hire (machine work)	\$3,750	Other (land, animals, etc.)	\$7,600
Depreciation and section 179	\$18,900	Repairs and maintenance	\$5,150
Employee benefit programs	\$0	Seeds and plants purch.	\$21,600
Feed purchased	\$0	Storage and warehousing	\$0
Fertilizers and lime	\$11,650	Supplies purchased	\$7,450
Freight and trucking	\$0	Taxes	\$8,600
Gasoline, fuel and oil	\$5,900	Utilities	\$7,840
Insurance	\$13,950	Veterinary, breeding, etc.	
Interest		Other expenses (specify)	\$5,430
a. Mortgage (paid to banks, etc.)	\$16,550		
b. Other			
Labor hired	\$46,450		
Total expenses			\$222,520
Net farm profit			\$85,389

Schedule F

Profit or Loss From Farming

1999
XXX-XX-XXXX

Joe Farmer
Vegetables

Part II Farm Income Cash Method

Accounting Method Cash

Sales of Livestock, produce, grains and other products you raised	\$206,270
Total Cooperative Distributions	0
Agricultural Program Payments	0
Commodity Credit Corporation (CCC) loans	0
CCC loans reported under election	0
CCC loans forfeited or repaid with certificates	0
Crop Insurance proceeds and certain disaster payments	0
Amount received in current year	\$38,745
Custom hire (machine work) income	0
Other Income	\$12,500
Gross Income	\$257,515

Part II Farm Expenses- Cash

Car and truck expense		Pension and profit shareing	\$0
Chemicals	\$35,055	Rent or lease	
Conservation expenses	\$0	Vehicles, mach. and equip.	\$764
Custom hire (machine work)	\$4,000	Other (land, animals, etc.)	\$7,600
Depreciation and section 179	\$20,600	Repairs and maintenance	\$6,110
Employee benefit programs	\$0	Seeds and plants purch.	\$21,894
Feed purchased	\$0	Storage and warehousing	\$0
Fertilizers and lime	\$8,364	Supplies purchased	\$7,503
Freight and trucking	\$431	Taxes	\$8,750
Gasoline, fuel and oil	\$5,670	Utilities	\$7,811
Insurance	\$14,950	Veterinary, breeding, etc.	\$0
Interest		Other expenses (specify)	\$4,613
a. Mortgage (paid to banks, etc.)	\$16,250		
b. Other			
Labor hired	\$44,380		
Total expenses			\$214,745
Net farm profit			\$42,770