Multiple-Peril Crop Insurance: Is it worth the cost?

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Introduction

- Risks Farmers Face
 - -Hail, Drought
 - -Early freeze in fall and Late freeze in Spring
 - -Price Risk
- What Crop Insurance (CI) is
 - -Benefits
 - -Current problems facing farmers that can be addressed with Cl
 - -Two main types to be analyzed:
 - 1) Multiple-Peril (MPCI),
 - 2) Crop Revenue Coverage/Revenue Assurance (CRC/RA)

Introduction

- MPCI- covers bushel losses only due to any natural weather occurrence (ex: hail, wind, freeze, drought, etc.)
- CRC/RA- covers losses just like MPCI but puts Price (CBOT futures) into the equation
 - B/C CRC and RA are very similar, the only real difference is that the prices are set at different times of the year and after 2010 they will become the same

Introduction

- Area being evaluated
 - -Dry-land Farm in Keith County, NE producing corn
 - -Average field size of 160 acres or a quarter section

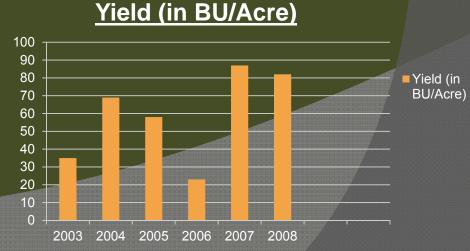
Resources & Background

- Ryan Knapp-Sunny Meadows Inc. John Deere Authorized Crop Insurance Agency
- Bruce Dodson-Agri Affiliates farm/ranch manager, real estate salesman
- USDA-NASS, USDA-RMA, Illinois University, Illinois State Water Survey, NeRain (Twin Platte NRD)

Resources & Background Con't.

- Keith County is located in South Western Nebraska where the corner of the panhandle meets Colorado
- Hail damage is frequent
- Dryland corn yields are relatively good for the area



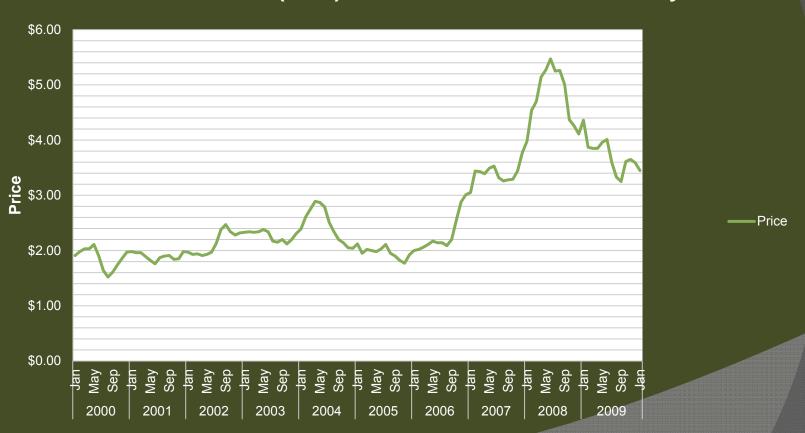


- Variables to be considered: two main variables
 - Price: volatile market, revenue depends on price
 - Production: amount of precipitation, pest infestation, hail, variety of seed corn, early or late freeze
- Method of Analysis: Benefit-Cost Analysis
 - At what point do the benefits (loss payments) of crop insurance out-weigh the costs (premiums)
 - Budget Enterprise
 - Dryland Budget Enterprise with MPCI, with CRC/RA
 - Dryland Budget Enterprise without crop insurance

- Variables that need to be determined:
 - Premium (\$) on a per acre basis
 - MPCI: \$10.82/acre
 - CRC/RA: \$7.30/acre
 - Production history of the area
 - Actual Production History (APH)
 - Set at 56 bu/acre
 - 80 bu/acre possible

- Variables that need to be determined (Con't)
 - Approximate cash market price of corn
 - \$3.50
 - Average level of coverage farmers purchase (Ranges from 50-85%)
 - -75% *(56 bu/acre x 0.75 = 42 bu/acre)
 - Price corn is insured at
 - MPCI: \$3.90 CRC/RA: \$3.92
 - With CRC/RA there is basically a guaranteed revenue of \$164/acre no matter what price is or yield

Price of Corn (\$/bu) 2000-Present in Keith County



Results

Twelve scenarios were plugged into a budget to determine the cost effectiveness.

- Three options looked at were:
 - CRC/RA Crop Insurance
 - Multiple-Peril Crop Insurance
 - No Crop Insurance
- Four levels of loss were considered:
 - No Loss
 - 25% Loss
 - 50% Loss
 - 75% Loss

Results

- The budget took into consideration:
 - Sale Price
 - Government Incentives created by the farm bill.
 - Claim payment from Insurance if damage occurred.
 - All possible expenses on a per/acre and total field cost.
 - These considerations help you discover your Net Income.

	ENTERPRISE BUDGET			2/14/10
Farm:	Keith Co Farm		# Acres:	160.0
Enterprise:	Corn, Ecofallow		Share:	100.00%
Income	\$/Unit	# Units	\$/Acre	Total
Sales	3.50	80.0	280.00	44,800
Gov't Pmt.	0.22	50.0	11.00	1,760
Insurance Claim				
Payment	0.00		0.00	0
				0
TOTAL INCOME:			291.00	46,560
Expenses				
Repair & Maint., Irr.			0.00	0
Seed	44.00		44.00	7,040
Fertilizer	50.00		50.00	8,000
Herbicide	25.00		25.00	4,000
Insecticide	0.00		0.00	0
Insurance, Crop	0.00		0.00	0
Grain Storage & Drying	0.00		0.00	0
Repairs, Fuel, Labor	(detail below)		52.00	8,320
RE Taxes	4.50		4.50	720
TOTAL EXPENSES:			175.50	28,080
NET INCOME:			115.50	18,480
Net Income/Expenses:				65.81%
Breakeven Price & Yield	2.19	50.1		
Detail Repairs, Fuel, Labo	or:(Field Operations)			
Spraying			5.00	
Planting			12.00	
Spraying			5.00	
			0.00	
			0.00	
Harvesting	22.00	1.00	22.00	
Trucking	80.00	0.10	8.00	
Total:			52.00	
Percent Actual Cost:	100.0%		52.00	

No Insurance No Loss

	ENTERPRISE BUDGET			2/14/10
	LIVILIA MOL BODGLI			<i>Li</i> 14710
Farm:	Keith Co Farm		# Acres:	160.0
Enterprise:	Corn, Ecofallow		Share:	100.00%
	,			
Income	\$/Unit	# Units	\$/Acre	Total
Sales	3.50	80.0	280.00	44,800
Gov't Pmt.	0.22	50.0	11.00	1,760
Insurance Claim Payment	3.90		0.00	0
				0
TOTAL INCOME:			291.00	46,560
Expenses				
Repair & Maint., Irr.			0.00	0
Seed	44.00		44.00	7,040
Fertilizer	50.00		50.00	8,000
Herbicide	25.00		25.00	,
Insecticide	0.00		0.00	
Insurance, Crop	10.82		10.82	
Grain Storage & Drying	0.00		0.00	0
Repairs, Fuel, Labor	(detail below)		52.00	8,320
RE Taxes	4.50		4.50	720
TOTAL EXPENSES:			186.32	29,811
NET INCOME:			104.68	16,749
Net Income/Expenses:				56.18%
Breakeven Price & Yield	2.33	53.2		
Detail Repairs, Fuel, Labo	r:(Field Operations)			
Spraying			5.00	
Planting			12.00	
Spraying			5.00	
			0.00	
			0.00	
Harvesting	22.00			
Trucking	80.00	0.10		
Total:			52.00	
Percent Actual Cost:	100.0%		52.00	

MPCI No Loss

	ENTERPRISE BUDGET			2/14/10
Farm:	Keith Co Farm		# Acres:	160.0
	Corn, Ecofallow		Share:	100.00%
	,			
Income	\$/Unit	# Units	\$/Acre	Total
Sales	3.50	80.0	280.00	44,800
Gov't Pmt.	0.22	50.0	11.00	1,760
Insurance Claim Payment	0.00		0.00	0
				0
TOTAL INCOME:			291.00	46,560
Expenses				
Repair & Maint., Irr.			0.00	0
Seed	44.00		44.00	7,040
Fertilizer	50.00		50.00	8,000
Herbicide	25.00		25.00	4,000
Insecticide	0.00		0.00	0
Insurance, Crop	7.30		7.30	1,168
Grain Storage & Drying	0.00		0.00	0
Repairs, Fuel, Labor	(detail below)		52.00	8,320
RE Taxes	4.50		4.50	720
TOTAL EXPENSES:			182.80	29,248
NET INCOME:			108.20	17,312
Net Income/Expenses:				59.19%
Breakeven Price & Yield	2.29	52.2		
Detail Repairs, Fuel, Labor	r:(Field Operations)			
Spraying			5.00	
Planting			12.00	
Spraying			5.00	
			0.00	
			0.00	
Harvesting	22.00	1.00		
Trucking	80.00	0.10	8.00	
Total:			52.00	
Percent Actual Cost:	100.0%		52.00	

CRC/RA No Loss

	ENTERPRISE BUDGET			2/14/10
Farm:	Keith Co Farm		# Acres:	160.0
Enterprise:	Corn, Ecofallow		Share:	100.00%
Income	\$/Unit	# Units	\$/Acre	Total
Sales	3.50	60.0	210.00	33,600
Gov't Pmt.	0.22	50.0	11.00	1,760
Insurance Claim Payment	0.00		0.00	0
				0
TOTAL INCOME:			221.00	35,360
Expenses				
Repair & Maint., Irr.			0.00	0
Seed	44.00		44.00	7,040
Fertilizer	50.00		50.00	
Herbicide	25.00		25.00	· ·
Insecticide	0.00		0.00	
Insurance, Crop	0.00		0.00	
Grain Storage & Drying	0.00		0.00	0
	(detail below)		52.00	8,320
RE Taxes	4.50		4.50	
TOTAL EXPENSES:			175.50	
NET INCOME:			45.50	·
				ĺ
Net Income/Expenses:				25.93%
Breakeven Price & Yield	2.93	50.1		
Detail Repairs, Fuel, Labo	r:(Field Operations)			
Spraying	. (5.00	
Planting			12.00	
Spraying			5.00	
opiajing			0.00	
			0.00	
Harvesting	22.00	1.00		
Trucking	80.00			
Total:	30.00	0.10	52.00	
Percent Actual Cost:	100.0%		52.00	

No Insurance 25% Loss

	ENTERPRISE BUDGET			2/14/10
Farm:	Keith Co Farm		# Acres:	160.0
Enterprise:	Corn, Ecofallow		Share:	100.00%
Income	\$/Unit	# Units	\$/Acre	Total
Sales	3.50	60.0	210.00	33,600
Gov't Pmt.	0.22	50.0	11.00	1,760
Insurance Claim Payment	3.90		0.00	0
				0
TOTAL INCOME:			221.00	35,360
Expenses				
Repair & Maint., Irr.			0.00	0
Seed	44.00		44.00	7,040
Fertilizer	50.00		50.00	
Herbicide	25.00		25.00	·
Insecticide	0.00		0.00	
Insurance, Crop	10.82		10.82	1,731
Grain Storage & Drying	0.00		0.00	
	(detail below)		52.00	8,320
RE Taxes	4.50		4.50	
TOTAL EXPENSES:			186.32	
NET INCOME:			34.68	
				ĺ
Net Income/Expenses:				18.61%
Breakeven Price & Yield	3.11	53.2		
	_			
Detail Repairs, Fuel, Labor	r:(Field Operations)			
Spraying	.(. тога орогоного)		5.00	
Planting			12.00	
Spraying			5.00	
op.ayg			0.00	
			0.00	
Harvesting	22.00	1.00		
Trucking	80.00			
Total:	30.00	0.10	52.00	
Percent Actual Cost:	100.0%		52.00	
i Grociii Actual Cost.	100.070		32.00	

MPCI 25% Loss

	ENTERPRISE BUDGET			2/15/10
Farm:	Keith Co Farm		# Acres:	160.0
Enterprise:	Corn, Ecofallow		Share:	100.00%
·				
Income	\$/Unit	# Units	\$/Acre	Total
Sales	3.50	60.0	210.00	33,600
Gov't Pmt.	0.22	50.0	11.00	
Insurance Claim Payment	0.00		0.00	
ĺ				0
TOTAL INCOME:			221.00	35,360
Expenses				
Repair & Maint., Irr.			0.00	0
Seed	44.00		44.00	
Fertilizer	50.00		50.00	
Herbicide	25.00		25.00	
Insecticide	0.00		0.00	
Insurance, Crop	7.30		7.30	
Grain Storage & Drying	0.00		0.00	
Repairs, Fuel, Labor	(detail below)		52.00	
RE Taxes	4.50		4.50	
TOTAL EXPENSES:			182.80	
NET INCOME:			38.20	
				· ·
Net Income/Expenses:				20.90%
Breakeven Price & Yield	3.05	52.2		
Detail Repairs, Fuel, Labor	:(Field Operations)			
Spraying			5.00	
Planting			12.00	
Spraying			5.00	
- 1 - 3			0.00	
			0.00	
Harvesting	22.00	1.00		
Trucking	80.00		8.00	
Total:			52.00	
Percent Actual Cost:	100.0%		52.00	

CRC/RA 25% Loss

	ENTERDRICE BURGET			2/14/10
	ENTERPRISE BUDGET			2/14/10
_	K 311 O E		// A	400.0
Farm:	Keith Co Farm		# Acres:	160.0
Enterprise:	Corn, Ecofallow		Share:	100.00%
Income	\$/Unit	# Units	\$/Acre	Total
Sales	3.50			
Gov't Pmt.	0.22			,
Insurance Claim	0.22	30.0	11.00	1,100
Payment	0.00		0.00	0
				0
TOTAL INCOME:			151.00	-
F				
Expenses			0.00	
Repair & Maint., Irr.	44.00		0.00	
Seed	44.00		44.00	,
Fertilizer	50.00		50.00	
Herbicide	25.00		25.00	·
Insecticide	0.00		0.00	
Insurance, Crop	0.00		0.00	
Grain Storage & Drying	0.00		0.00	
Repairs, Fuel, Labor	(detail below)		52.00	,
RE Taxes	4.50		4.50	
TOTAL EXPENSES:			175.50	,
NET INCOME:			-24.50	-3,920
Net Income/Expenses:				-13.96%
Breakeven Price & Yield	4.39	50.1		
Detail Repairs, Fuel, Labo	or:/Field Operations)			
Spraying	or.(i leid Operations)		5.00	
Planting			12.00	
			5.00	
Spraying			0.00	
			0.00	
Harveeting	22.00	1.00		
Harvesting				
Trucking	80.00	0.10		
Total:	400.00/		52.00	
Percent Actual Cost:	100.0%		52.00	

No Insurance 50% Loss

	ENTERPRISE BUDGET			2/14/10
	Keith Co Farm		# Acres:	160.0
Enterprise:	Corn, Ecofallow		Share:	100.00%
Income	\$/Unit	# Units	\$/Acre	Total
Sales	3.50	40.0	140.00	22,400
Gov't Pmt.	0.22	50.0	11.00	1,760
Insurance Claim Payment	3.90	2.0	7.80	1,248
				0
TOTAL INCOME:			158.80	25,408
Expenses				
Repair & Maint., Irr.			0.00	0
Seed	44.00		44.00	7,040
Fertilizer	50.00		50.00	
Herbicide	25.00		25.00	·
Insecticide	0.00		0.00	
Insurance, Crop	10.82		10.82	
Grain Storage & Drying	0.00		0.00	·
	(detail below)		52.00	
RE Taxes	4.50		4.50	
TOTAL EXPENSES:	11.5		186.32	
NET INCOME:			-27.52	
				1,100
Net Income/Expenses:				-14.77%
Breakeven Price & Yield	4.66	53.2		1 70
Breakeverr rice a ricia		00.2		
Detail Repairs, Fuel, Labor	r:(Field Operations)			
Spraying	.(i .oid opoidiono)		5.00	
Planting			12.00	
Spraying			5.00	
Opiaying			0.00	
			0.00	
Harvesting	22.00	1.00		
Trucking	80.00			
Total:	00.00	0.10	52.00	
Percent Actual Cost:	100.0%			
rercent Actual Cost.	100.0%		52.00	

MPCI 50% Loss

ENTERPRISE BUDGET			2/14/10
Keith Co Farm		# Acres:	160.0
Corn, Ecofallow		Share:	100.00%
\$/Unit	# Units	\$/Acre	Total
3.92	40.0	156.80	25,088
0.22	50.0	11.00	1,760
3.92	2.0	7.84	1,254
			0
		175.64	28,102
		0.00	0
44.00		44.00	7,040
50.00		50.00	8,000
25.00		25.00	·
0.00		0.00	
0.00			
(detail below)		52.00	8,320
` '		4.50	
		182.80	29,248
		-7.16	-1,146
			-3.92%
4.57	46.6		
::(Field Operations)			
Α(5.00	
22.00	1.00		
00.00	3.10		
100.0%			
	Keith Co Farm Corn, Ecofallow \$/Unit 3.92 0.22 3.92 44.00 50.00 25.00 0.00 7.30 0.00 (detail below) 4.50 22.00 80.00	Keith Co Farm Corn, Ecofallow \$/Unit # Units 3.92	Keith Co Farm Corn, Ecofallow \$/Unit # Units \$/Acre 3.92 40.0 156.80 0.22 50.0 11.00 3.92 2.0 7.84 175.64 44.00 44.00 50.00 50.00 25.00 0.00 7.30 7.30 0.00 0.00 7.30 7.30 0.00 0.00 (detail below) 4.50 4.50 48.50 182.80 -7.16 (Field Operations) 5.00 22.00 1.00 22.00 80.00 0.10 8.00 52.00

CRC/RA 50% Loss

	ENTERPRISE BUDGET			2/14/10
Farm:	Keith Co Farm		# Acres:	160.0
Enterprise:	Corn, Ecofallow		Share:	100.00%
Income	\$/Unit	# Units	\$/Acre	Total
Sales	3.50	20.0	70.00	11,200
Gov't Pmt.	0.22	50.0	11.00	1,760
Insurance Claim				
Payment	0.00		0.00	0
				0
TOTAL INCOME:			81.00	12,960
Expenses				
Repair & Maint., Irr.			0.00	0
Seed	44.00		44.00	7,040
Fertilizer	50.00		50.00	8,000
Herbicide	25.00		25.00	4,000
Insecticide	0.00		0.00	0
Insurance, Crop	0.00		0.00	0
Grain Storage & Drying	0.00		0.00	0
	(detail below)		52.00	8,320
RE Taxes	4.50		4.50	720
TOTAL EXPENSES:			175.50	28,080
NET INCOME:			-94.50	-15,120
Net Income/Expenses:				-53.85%
Breakeven Price & Yield	8.78	50.1		
Detail Repairs, Fuel, Labo	or:(Field Operations)			
Spraying			5.00	
Planting			12.00	
Spraying			5.00	
- F - 7 - 3			0.00	
			0.00	
Harvesting	22.00	1.00		
Trucking	80.00			
Total:		• • • • • • • • • • • • • • • • • • • •	52.00	
Percent Actual Cost:	100.0%		52.00	

No Insurance 75% Loss

	ENTERPRISE BUDGET			2/14/10
	ENTERN NICE BODGET			2711710
Farm:	Keith Co Farm		# Acres:	160.0
	Corn, Ecofallow		Share:	100.00%
	,			
Income	\$/Unit	# Units	\$/Acre	Total
Sales	3.50	20.0	70.00	11,200
Gov't Pmt.	0.22	50.0	11.00	1,760
Insurance Claim Payment	3.90	22.0	85.80	13,728
				0
TOTAL INCOME:			166.80	26,688
Expenses				
Repair & Maint., Irr.			0.00	0
Seed	44.00		44.00	7,040
Fertilizer	50.00		50.00	
Herbicide	25.00		25.00	
Insecticide	0.00		0.00	
Insurance, Crop	10.82		10.82	1,731
Grain Storage & Drying	0.00		0.00	
Repairs, Fuel, Labor	(detail below)		52.00	8,320
RE Taxes	4.50		4.50	
TOTAL EXPENSES:			186.32	29,811
NET INCOME:			-19.52	
				ĺ
Net Income/Expenses:				-10.48%
Breakeven Price & Yield	9.32	53.2		
Detail Repairs, Fuel, Labo	r:(Field Operations)			
Spraying			5.00	
Planting			12.00	
Spraying			5.00	
, , ,			0.00	
			0.00	
Harvesting	22.00	1.00	22.00	
Trucking	80.00	0.10	8.00	
Total:			52.00	
Percent Actual Cost:	100.0%		52.00	

MPCI 75% Loss

	ENTERPRISE BUDGET			2/14/10
	ENTERPRISE BUDGET			2/14/10
Farm:	Keith Co Farm		# Acres:	160.0
Enterprise:	Corn, Ecofallow		Share:	100.00%
Enterprise.	Com, Ecolaliow		Silait.	100.00 %
Income	\$/Unit	# Units	\$/Acre	Total
Sales	3.92			
Gov't Pmt.	0.22			,
Insurance Claim Payment				·
modranos sidim r dymoni	0.02	22.0	00.21	0
TOTAL INCOME:			175.64	
TO TALE II TO OTTILE.			110.01	20,102
Expenses				
Repair & Maint., Irr.			0.00	0
Seed	44.00		44.00	
Fertilizer	50.00		50.00	,
Herbicide	25.00		25.00	
Insecticide	0.00		0.00	•
Insurance, Crop	7.30		7.30	
Grain Storage & Drying	0.00		0.00	
Repairs, Fuel, Labor	(detail below)		52.00	
RE Taxes	4.50		4.50	
TOTAL EXPENSES:			182.80	29,248
NET INCOME:			-7.16	-1,146
Net Income/Expenses:				-3.92%
Breakeven Price & Yield	9.14	46.6		
Detail Repairs, Fuel, Labo	r:(Field Operations)			
Spraying	,		5.00	
Planting			12.00	
Spraying			5.00	
			0.00	
			0.00	
Harvesting	22.00	1.00	22.00	
Trucking	80.00	0.10	8.00	
Total:			52.00	
Percent Actual Cost:	100.0%		52.00	

CRC/RA 75% Loss

Conclusion/Recommendation

- Because the agents assume the farmer is a new producer and give an APH of 56 some feel that it is worth the risk to go without CI until he establishes his own true APH and have yield that insured.
- This analysis determined that even at an APH of 56, the producer should be insured because the CI program is subsidized by the US Govt. and makes it so affordable.
- Of course the cost of CI seems pointless at really low levels of crop loss, however in Keith County, there is a relatively high chance that there will be hail damage with an average of 4 hail days throughout the year. Also with a dryland corn operation low precipitation can be very detrimental to the yield. Drought is a risk to be considered in this area as well.

Conclusion/Recommendation

- After comparing the Ent. Budgets with and without CI it is evident that CI places a floor on the amount of money that can be lost per acre in the incidence of crop damage/loss
- The analysis seemed to point at the CRC/RA CI policy as the best fit for the farm.
- This policy results in the higher net income/acre. It also gives producers the protection they need in the volatile market and allows them to forward contract and not worry what the market is doing.
- Due to being a new producer, taking such a risk as not buying insurance could lead to a loss of \$100 or more per acre which would bankrupt most new producers. But if carrying CRC/RA, he has a lot higher chance of overcoming the loss.

Conclusion/Recommendation

There are other forms of insurance outside of Gov't. that could guarantee a positive net income when used with CRC/RA. So that is also another option to consider.

Questions?

