

# Cornhusker Economics

Cooperative Extension

Institute of Agriculture & Natural Resources  
Department of Agricultural Economics  
University of Nebraska - Lincoln

## Evaluating Multi-Peril Crop Insurance Coverage

Market Report	Yr Ago	4 Wks Ago	11/5/04
<b><u>Livestock and Products,</u></b>			
<b><u>Weekly Average</u></b>			
Nebraska Slaughter Steers, 35-65% Choice, Live Weight . . . . .	\$104.76	\$83.58	\$81.41
Nebraska Feeder Steers, Med. & Large Frame, 550-600 lb . . . . .	109.68	125.21	121.58
Nebraska Feeder Steers, Med. & Large Frame 750-800 lb . . . . .	108.74	110.85	104.16
Choice Boxed Beef, 600-750 lb. Carcass . . . . .	169.97	132.99	134.11
Western Corn Belt Base Hog Price Carcass, Negotiated . . . . .	49.43	71.23	77.69
Feeder Pigs, National Direct 45 lbs, FOB . . . . .	39.26	45.72	52.92
Pork Carcass Cutout, 185 lb. Carcass, 51-52% Lean . . . . .	56.63	74.29	73.00
Slaughter Lambs, Ch. & Pr., 90-160 lbs., Shorn, Midwest . . . . .	89.37	89.00	85.87
National Carcass Lamb Cutout, FOB . . . . .	208.30	219.84	223.59
<b><u>Crops,</u></b>			
<b><u>Daily Spot Prices</u></b>			
Wheat, No. 1, H.W. Omaha, bu . . . . .	3.63	3.16	3.33
Corn, No. 2, Yellow Omaha, bu . . . . .	2.23	1.79	1.64
Soybeans, No. 1, Yellow Omaha, bu . . . . .	7.30	4.88	4.80
Grain Sorghum, No. 2, Yellow Columbus, cwt . . . . .	3.86	2.80	2.68
Oats, No. 2, Heavy Minneapolis, MN, bu . . . . .	1.62	1.61	1.59
<b><u>Hay</u></b>			
Alfalfa, Large Square Bales, Good to Premium, RFV 160-185 Northeast Nebraska, ton . . . . .	115.00	115.00	115.00
Alfalfa, Large Rounds, Good Platte Valley, ton . . . . .	67.50	62.50	62.50
Grass Hay, Large Rounds, Good Northeast Nebraska, ton . . . . .	65.00	57.50	57.50
* No market.			

Past issues of this newsletter have addressed the assessment of crop insurance needs (March 11 and November 11, 1998). The approach suggested was to identify the cash flow commitments for the year and then to prioritize those commitments. The latter step was suggested recognizing that: 1) insurance coverage may not be available to cover all commitments, 2) even if sufficient coverage is available, premiums increase substantially as coverage is increased, and 3) the more insurance purchased the more risk transferred to the insurance company and the less profit potential retained by the farm operation. In a more recent issue the trade-off between risk and return was illustrated by comparing levels of crop revenue coverage and forward pricing (February 12, 2003). It was suggested the level of crop revenue coverage be characterized by the associated per acre revenue guarantee, which in turn can be compared to the per acre cash commitments.

Earlier this year we discussed the possibility of reducing premiums by combining fields or farms into enterprise or whole farm units (February 11, 2004). These alternative insurance units are another way of adjusting the coverage (and premiums). The most coverage is provided by optional units with basic, enterprise and whole farm units, each in turn providing less coverage. The objective of this newsletter is to explore these alternatives.

**Basic Unit** - All insurable acreage of the insured crop in the county: 1) in which you have a 100 percent crop share; or 2) which is owned by one person and operated by another person on a share basis. Example: If in addition to the land you own, you rent land from five landlords, three on a crop share basis and two on a cash basis, you would be entitled to four units, one

for each crop share lease and one that combines the two cash leases and the land you own.

**Optional Units** - Optional units may be established by splitting a basic unit into the separate sections it occupies. In addition to or instead of establishing optional units by section, optional units may be based on irrigated and non-irrigated acreage.

**Enterprise Unit** - All insurable acreage of the insured crop in the county located in two or more sections.

**Whole-Farm Unit** - All insurable acreage of the insurable crops in the county.

The tables on the next page illustrate the combining of dryland and irrigated corn into an enterprise unit. Table 1 reports irrigated and dryland yields for a case farm. The dryland yields are actual farm yields from Cass County Nebraska and the irrigated yields are from a tillage study conducted at the South Central Agricultural Laboratory in Clay County Nebraska. Table 1 also reports the actual Crop Revenue Coverage (CRC) harvest prices and the resulting calculated revenue for each year from 1981 through 2002. The CRC calculated revenue is the actual yield times the CRC harvest price. The CRC harvest price is the October average of the Dec. corn futures. The last column in Table 1 is the average calculated sales revenue per acre, assuming 500 acres of dryland and 500 acres of irrigated.

The actual production history (APH) is assumed to be 120 bushels per acre for the dryland acres and 171 bushels per acre for the irrigated acres. Premiums were calculated based on the CRC premium structure for 2004 and the 2004 CRC base price of \$2.83. Table 2 reports those premiums for optional units for dryland and irrigated corn at 75 percent coverage and for 80 percent coverage on the combined dryland and irrigated enterprise unit. Note that the 80 percent coverage under the enterprise option could have been purchased for about the same premium as the 75 percent optional unit (separate dryland and irrigated) coverage. See Premium near the top of Table 2. The minimum guarantee (Min Guar in Table 2) is determined by multiplying coverage times the APH times the base price for the optional unit protection. A weighted average APH yield is used under the enterprise option, which in our example is 500 acres x 120 bu/acre dryland plus 500 acres x 171 bu/acre irrigated divided by the 1,000 total corn acres, or 145.5 bu/acre.

If the harvest price is above the base price the revenue guarantee is based on the harvest price which was the case in our simulation for 1983 and 1995. If the calculated revenue falls below the guarantee an indemnity makes up the shortfall. The net indemnity (indemnity minus the 2004 premium) is reported for each year from 1981 through 2002 assuming the yield and harvest price for each year respectively. Under optional coverage the dryland would have received an indemnity six years out of the 22, and irrigated would have received an indemnity in each of 5 years. The 80 percent enterprise coverage would have received an indemnity seven years out of the 22.

The net revenue per acre (calculated revenue plus any indemnity minus the premium) is reported for each year in Table 3. In this example the insured would have realized nearly \$5 net more per acre (\$365.23 vs \$360.84) by throwing the irrigated and dryland together and increasing coverage (at no additional premium) instead of insuring the irrigated and dryland separately. The optional coverage also realized \$20 less net revenue per acre in the worst year and fell below \$317 in each of six years, while the enterprise coverage net revenue never fell below \$317 .

Anyone with historical yields could duplicate the above analysis for their operation. An insurance agent can help with the premiums and will also be aware of the rules that must be satisfied to qualify for an enterprise discount.

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Note: If you would like a copy of any of the past *Cornhusker Economics* mentioned in this article call Nancy at (402) 472-1789 or email: [npritchett1@unl.edu](mailto:npritchett1@unl.edu).

**Table 1. Case Farm Historical Yields and Prices**

Year	CRC			Calculated Revenue per Acre		
	Corn Yield/Acre		Harvest	500 ac	500 ac	1,000
	Dryland	Irrigated	Price/bu	Dryland	Irrigated	Average
1981	124	205	\$2.77	\$343	\$568	\$456
1982	131	179	\$2.33	\$305	\$417	\$361
1983	110	115	\$3.49	\$384	\$402	\$393
1984	118	141	\$2.73	\$322	\$385	\$354
1985	94	100	\$2.38	\$224	\$238	\$231
1986	89	151	\$1.70	\$152	\$257	\$204
1987	126	208	\$1.83	\$231	\$381	\$306
1988	131	193	\$2.69	\$353	\$520	\$437
1989	149	204	\$2.38	\$355	\$485	\$420
1990	146	191	\$2.27	\$332	\$434	\$383
1991	110	195	\$2.44	\$268	\$475	\$371
1992	136	181	\$2.12	\$288	\$383	\$336
1993	114	177	\$2.77	\$315	\$489	\$402
1994	139	191	\$2.16	\$300	\$412	\$356
1995	165	177	\$3.29	\$543	\$582	\$562
1996	76	95	\$2.69	\$204	\$255	\$230
1997	143	134	\$2.76	\$394	\$370	\$382
1998	100	175	\$2.20	\$220	\$384	\$302
1999	128	181	\$1.96	\$251	\$355	\$303
2000	142	208	\$2.04	\$290	\$425	\$357
2001	141	186	\$2.08	\$294	\$388	\$341
2002	136	172	\$2.52	\$343	\$434	\$389
APH	120	171				

**Table 2. Case Farm**

	Net Indemnity per Acre		
	Dryland	Irrigated	
	75%	75%	80%
<b>Coverage:</b>	Optional	Optional	Enterprise
<b>Min Guar:</b>	\$254.70	\$362.95	\$329.41
<b>Premium:</b>	\$12.18	\$11.21	\$11.58
1981	-\$12.18	-\$11.21	-\$11.58
1982	-\$12.18	-\$11.21	-\$11.58
1983	-\$12.18	\$35.07	\$2.04
1984	-\$12.18	-\$11.21	-\$11.58
1985	\$18.64	\$113.56	\$86.80
1986	\$90.86	\$94.42	\$113.34
1987	\$11.48	-\$11.21	-\$11.62
1988	-\$12.18	-\$11.21	-\$11.58
1989	-\$12.18	-\$11.21	-\$11.58
1990	-\$12.18	-\$11.21	-\$11.58
1991	-\$12.18	-\$11.21	-\$11.58
1992	-\$12.18	-\$11.21	-\$11.58
1993	-\$12.18	-\$11.21	-\$11.58
1994	-\$12.18	-\$11.21	-\$11.58
1995	-\$12.18	-\$11.21	-\$11.58
1996	\$38.35	\$96.52	\$88.14
1997	-\$12.18	-\$11.21	-\$11.58
1998	\$22.90	-\$11.21	\$15.85
1999	-\$8.36	-\$3.02	\$15.01
2000	-\$12.18	-\$11.21	-\$11.58
2001	-\$12.18	-\$11.21	-\$11.58
2002	-\$12.18	-\$11.21	-\$11.58
<b>Average Net</b>	<b>-\$0.96</b>	<b>\$6.64</b>	<b>\$7.23</b>

**Table 3. Case Farm Simulated**

	Net Revenue per Acre	
	Optional	Enterprise
1981	\$443.95	\$444.06
1982	\$349.55	\$349.67
1983	\$404.39	\$394.99
1984	\$342.04	\$342.16
1985	\$297.13	\$317.83
1986	\$297.13	\$317.83
1987	\$306.35	\$317.83
1988	\$424.88	\$424.99
1989	\$408.31	\$408.43
1990	\$371.31	\$371.42
1991	\$359.80	\$359.91
1992	\$324.03	\$324.14
1993	\$390.61	\$390.73
1994	\$344.19	\$344.30
1995	\$550.79	\$550.90
1996	\$297.13	\$317.83
1997	\$370.22	\$370.33
1998	\$307.83	\$317.83
1999	\$297.13	\$317.83
2000	\$345.60	\$345.72
2001	\$329.10	\$329.21
2002	\$377.04	\$377.15
<b>Average</b>	<b>\$360.84</b>	<b>\$365.23</b>
<b>Minimum</b>	<b>\$297.13</b>	<b>\$317.83</b>
<b>Yrs Below</b>	<b>6</b>	<b>0</b>